

Minnesota Medicine

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VOLUME I.

JANUARY TO DECEMBER 1918

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Minnesota Medicine

Journal of the Minnesota State Medical Association

Vol. I

SAINT PAUL, MINNESOTA, JANUARY, 1918

No. 1

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ORIGINAL ARTICLES

THE ORTHOPEDIC TREATMENT OF DEFORMITIES RESULTING FROM INCURABLE PARALYSIS.*

ARTHUR J. GILLETTE, M. D.,
SURGEON-IN-CHIEF OF THE MINNESOTA STATE
HOSPITAL FOR INDIGENT CRIPPLED AND
DEFORMED CHILDREN;

AND

CARL C. CHATTERTON, M. D.,
ASSOCIATE SURGEON-IN-CHIEF OF THE MINNE-
SOTA STATE HOSPITAL FOR INDIGENT CRIP-
PLED AND DEFORMED CHILDREN.

St. Paul, Minn.

This subject ought to be of special interest in Minnesota as the state legislature appropriated money last winter for the investigation of the subject of anterior poliomyelitis, and the State Board of Health is holding clinics all over the state. These clinics have demonstrated the advisability of this paper.

There are so many forms of incurable paralysis which can be helped considerably by mechanical treatment, and which are not cases of anterior poliomyelitis, that it would seem it might be of some benefit to these cases and also of assistance to the general practitioner to spend a few moments enumerating some of these.

It is to be understood that there is no reference made whatever to the true anterior polio-

myelitis cases, but to the various other forms of deformities of the extremities due to other forms of paralysis.

In the first place, most of these cases are incurable; many of them gradually get worse until the patient finally dies directly or indirectly of these forms of progressive paralysis. It is well to call the attention of the general practitioner to this for the reason that they are very likely to be confused with anterior poliomyelitis, and the parents are often told by the family physician that the child will never die of the disease but will have a tendency, for a great many years, to gradually improve, though probably never completely recover. This is true of anterior poliomyelitis, but not true of all the diseases herein enumerated. Then, too, from a physician's standpoint, these patients, unless they are correctly diagnosed, are told by the physician that this disease will not result in death, but that they will show considerable improvement and may in time recover ability to get about with orthopedic treatment. Thus, orthopedic treatment is often advised, the physician thinking he is treating a case of anterior poliomyelitis, when, as a matter of fact, he is treating a form of paralysis, some of which is progressive in character, and the patient gets weaker and weaker. At the same time, if it is thoroughly understood by the patient that the doctor has recognized an incurable progressive disease and yet one which can be helped for many years by mechanical appliances, the patient's life is made a great deal happier for a number of years. Therefore, as stated, if mechanical appliances are used, and the patient or parents are informed of the exact facts, the remaining years, which may extend over years of

*Read at the annual meeting of the Minnesota State Medical Association, St. Paul, Minn., Oct. 11 and 12, 1917.

time, are made much happier than they would be if the patient merely sat about waiting for the end to come.

Take for instance, progressive muscular atrophy. As the term implies, this is a progressive disease characterized by wasting of the muscles and loss of power, terminating finally in deformity and later, death. The cause is some defect in development. There are two general forms of progressive muscular atrophy. One in which the disease is primarily in the spinal cord, the myopathic form, in which the disease appears primarily in the nerve terminals and muscle fibers. The second form is usually referred to as muscular dystrophy to distinguish it from the spinal form. The myopathic form usually begins in the small muscles of the hand and spreads from the periphery to the trunk. The other form is usually classed with muscular atrophy, and the paralysis may begin in the muscles of the legs causing deformity. This latter type is many times checked in its progress for years and years by orthopedic treatment, which checks the rapid increase of deformity and keeps the lower limbs capable of supporting the weight of the body, thus allowing the patient to go about for years attending school, etc. However, as soon as the braces are removed the patient collapses and is unable to get about. The sad part of it is that they go on living for years perfectly helpless unless assisted by mechanical supports.

Pseudo-hypertrophic muscular paralysis belongs to the type of cases under discussion. It is usually a hypertrophy in the calf muscles, "tea kettle legs," being largely due to a deposit of fat in the wasting muscles. Sometimes this form of paralysis affects the muscles of the shoulders, sometimes the face, but the supposed etiology, pathology and clinical course of the trophic and pseudo-hypertrophic paralysis do not differ much.

At a glance, one can see how these cases might easily be diagnosed all the way from "rheumatism" to true anterior poliomyelitis, and in this way lead to a great deal of embarrassment and confusion in later years.

These cases of incurable paralysis can be greatly benefited for years, but never cured, by applying braces and supports. The limbs are

very weak but the patient is able to get about, and the extra amount of work placed upon the weakened muscles causes pain which a brace relieves. Sometimes the discomfort is in the back due to the extreme lordosis from muscle weakness, and this can very often be relieved by a brace. Often a form of club-foot, hyperextension of the knee or gradual flexion of the knee prevents a child from getting about, and by the use of tendon lengthening and a slight support they get about for years with comfort and pleasure.

There is another form of progressive paralysis designated as hereditary ataxia or Friedrich's disease. This is an ataxia which is hereditary and is caused by sclerosis of the posterior and lateral columns of the spinal cord. The first symptom usually noticed by the parents is incoordination and weakness of the legs. This gradually increases until the upper extremities are involved, and the speech is affected. There is frequently distortion of the feet, or a posterior or lateral curvature of the spine. These patients, too, with the assistance of braces applied to the feet, legs and back, are often temporarily benefited for a period of many years.

It is not surprising that some physicians mistake a case of cerebral paralysis of childhood (spastic paralysis) for anterior poliomyelitis. As you know, we usually have cases of infantile paralysis in our midst most of the time, and have had for years; the newspapers are filled with articles on the subject of anterior poliomyelitis, usually designated incorrectly as infantile paralysis; and now and then we meet doctors who do not differentiate between a spastic and a flaccid paralysis. The spastic paralysis is often first observed just about the age an anterior poliomyelitis, which is a flaccid paralysis, appears; and we frequently meet cases who have gone for years, the parents and the doctor thinking that the child had the so-called infantile paralysis, really anterior poliomyelitis, which is never spastic. One is of cerebral origin, usually affecting the mentality of the child, while anterior poliomyelitis does not affect the mentality in any way. Spastic paralysis may be hemiplegic; it may be limited to the lower extremities; it may involve both

upper and lower extremities; and in rare instances there is but one extremity affected, and so on.

One thing is characteristic of all these cases of cerebral palsy or spastic paralysis and will differentiate it in every instance, so far as we have ever seen, and that is, there is more or less spasm in the affected muscle, while in anterior poliomyelitis there is never any muscle spasm except possibly for a few weeks following the acute attack. Also in the latter the reflexes are nearly always lost, while in the former they are always present and exaggerated.

Many of these cases of paralysis must be caused during difficult labor. We have seen many in the past years, both in our office and in the Minnesota State Hospital for Incurable Crippled and Deformed Children, who give a positive history of having had a long labor, and many, many times, a necessary instrumental delivery. A sufficient percentage of these cases of spastic paralysis of cerebral origin give a positive and accurate history of prolonged labor or instrumental delivery to indicate that there should be more care taken in the use of the forceps. General practitioners, for some reason, always resent this. However, if you could be in our office or at the hospital clinic and hear from day to day, not only from the family physician but from the parents as well, that this was an instrumental delivery, the obstetrician could not but help being more careful in his application of instruments and apply them less frequently, or possibly more frequently but with greater caution, with the above in mind, than they now do. This is a subject that we seldom refer to in conversing with the doctors, as they resent it so bitterly, but usually in getting the history of these cases we have for years made inquiry, either of the parent or doctor, so that we hope they will recognize the clinical fact, that we believe in many, many instances it is a causative factor and an important one to bear in mind in child-birth. One must remember also, with this causative factor in mind, that there are cases of paralysis which are acquired after birth, very early in infancy. For instance, meningeal, thrombosis, embolism, syphilitic, cysts, sclerosis, chronic meningitis, hydrocephalus, and primary encephalitis. All of these

conditions produce changes in the nervous system which in many cases interfere with mentality and, more especially in early life, give rise to the symptoms of spastic paralysis. Inability to get about is usually the first symptom noticed in spastic paralysis. Hence the reason so many of these cases are wrongly diagnosed as anterior poliomyelitis.

These cases are constantly being brought to doctors and clinics, and if one is not very, very careful indeed, and on the lookout for these possibilities, they will be diagnosed and treated, or advised to be treated by massage, electricity, etc., which is not only useless, but in many instances very serious results have been known to occur from the injudicious use of electricity and massage in these spastic forms of paralysis.

The greatest importance in differentiating these cases from anterior poliomyelitis lies in the very, very important and practical part of treatment. Certainly all of these cases, even progressive muscular atrophy, can be improved a great deal by treatment and by orthopedic treatment. Of course, if a child is a hopeless idiot it is useless to attempt myotomies and neurotomies as an ambulatory idiot is much more difficult to take care of than one whom you at least know where he is. Many of these cases, in fact a large majority of them, are far from being idiots. They are simple and backward, and yet many of them grow up to be very bright and useful men and women; and if they are not hampered by the inability to walk, through the assistance of tenotomies, etc., many can be made to lead useful and happy lives. Certainly it requires a great deal of patience and work to get them to walking, and seldom, if ever, is a physician ever thanked or appreciated for the time and patience he has taken with not only the parents, but the child as well, to bring about results. These children usually do better, after they are able to get about, if they are sent to a school for backward children. We have some rather indifferent teaching along this line in our public schools, but not enough attention is paid to it. We do not believe our state institutions for backward children are doing as much along this line as they could do if they had larger appropriations. We also believe the physicians in charge of these institutions should

take more interest in overcoming the deformities as much as possible in these spastic cases. We have an excellent private school for these children in this state. However, no one is particularly interested in backward children except the parents. Thank God there are not enough to attract special attention. When you have succeeded in convincing the parents of such children that the child needs special muscle training, special treatment and special school training, you have accomplished the most difficult part in helping these children get through life, able to get about and play; and you have assisted the teachers, who will later have them for training, in overcoming the prejudice of the parents toward them because they have informed them that their child is not bright. We know we are now getting into the field of the neurologist who knows more about this particular side of the care and training of these cases than any orthopedic surgeon or general practitioner possibly could. However, we really do not believe that the neurologist, as a rule, has an opportunity to treat and advise these children and parents of such children as much as they should. It is the same story; the parents resent it the very moment you tell them there is something wrong with the child's brain. Time and time again have we advised that before suggesting any orthopedic treatment for these children, the parents should take them to some brain specialist so that we could ascertain how much could be expected of the child in a mental way, and ascertain if the child was really bright enough to walk, in case we should get him on his feet. The result in many cases has been that they have left us in disgust and absolutely refused to go and see a brain specialist, stating that they knew without asking his opinion that their child was bright. The family physician, too, is at fault here. For many reasons he either does not know that the child is undeveloped mentally, or he does not "hanker for the job" of telling the parents so. We have known instances right here in St. Paul, where the parents have absolutely refused to have anything further to do with their doctor who frankly told them the truth. When we refer cases to a neurologist we not only ask him to help us classify the case but we inform him, and very truly, too, that we wish him to make

an exact diagnosis, and also give us some idea as to whether or not mechanical apparatus would have a tendency to irritate the child's already nervous condition.

We have not referred to the simpler forms of idiocy which interfere with walking, as this article is largely along the line of cases which are likely to be confused with anterior poliomyelitis, and some of which can be greatly benefited by orthopedic treatment.

In treating these cases of spastic paralysis, braces should never be used to overcome deformity, as it is simply a battle between the brace and the strength and spasm of the muscles. When there is an attempt made to overcome the deformity all contracted tissues should be divided, for any irritation, or anything that will increase spasm of the affected muscle, creates a battle between the brace and muscle and we have never known an instance where the muscle did not win.

Pseudo-rachitic paralysis is so frequently confused with anterior poliomyelitis that we cannot let it pass without referring to it, especially in these days of artificially fed children. In these cases it is a flaccid condition because of the extreme rachitic state, and they are frequently referred to us as being cases of anterior poliomyelitis, when they are simply cases of improper feeding. The one symptom ever present in pseudo-rachitic paralysis is that the reflexes are practically normal and the child can with effort move his extremities.

Scorbutic children, the condition occurring as it does in infancy, have been supposed to be cases of anterior poliomyelitis, especially as they resemble the early and painful stage of anterior poliomyelitis. Of course, the reflex, lack of atrophy, and spongy gums will differentiate this condition.

Volkman's ischemic paralysis is another form of paralysis to which we wish to refer today. It may seem strange, but such cases have been referred to us for infantile paralysis cases or spastic paralysis, some physicians going so far as to say that this case of spastic or infantile paralysis occurred while the patient was wearing the cast. A moment's thought, however, will differentiate these cases, as the paralysis is so local. However, they hold the hand and arm in typical position of a spastic paralysis,

but the knowledge that sudden injury does produce these typical deformities is sufficient to check one from falling into this error.

Erb's paralysis could also be mentioned in passing. This is a birth palsy but frequently is not discovered until a child is older, when it is noticed that he does not use his arm. This is another condition which is frequently found after difficult labor or the use of instruments.

We are anxious to refer to an incurable deformity here as it seems to be the proper place, and that is the so-called Charcot's joint. Charcot's disease, or a Charcot's joint, is a destructive arthritis which is nearly always secondary to locomotor ataxia. The cartilage degenerates, together with the bone, and is altered in its shape by the movements of the limbs. It is an exaggerated and irregular formation of cartilage about the periphery. All of the tissues entering into the joint are hypertrophied, and many times, please do not forget this, the deformed joint is often treated for months and even years, the symptoms of locomotor ataxia being so slight that they have been entirely overlooked. Some believe, and rightly too, that a Charcot's joint can develop even before the symptoms of locomotor ataxia are definite. In many cases, one we know of especially, the patients have suffered amputations and other excisions before the real spinal cord lesion was discovered.

Joint diseases may be secondary to other forms of diseases of the nervous system. Referring to locomotor ataxia reminds us that we have had one case of Charcot's joint which occurred in a case of paralysis of the spinal cord from tuberculosis of the vertebrae. We know this is true as a post mortem was made. Fortunately, from a clinical standpoint, there is one marked and ever present symptom, and it is the only symptom we call to mind now, which will differentiate a Charcot's joint from any other joint disease, and this is that instead of the joint being fixed, as it is in all other forms of joint disease, a Charcot's joint is extremely loose and lax. This brings us to the point of treatment of Charcot's joints. Excision is out of the question as the bones will not unite. Amputation is useless as the inability to locomote is due to the disease in the spinal cord affecting the entire extremity, and a patient

with locomotor ataxia cannot get about on crutches as well as on a stiff limb. We have a number of cases, in the neighborhood of ten, who are wearing braces on their legs to steady the ankles or knees and are able to earn their own living, and can walk and get about and have for a number of years. One man has been under our care in the neighborhood of sixteen years. He is wearing a brace which holds the knee perfectly stiff. The knee dislocates when the brace is off although he has no pain. The man is a ticket agent in a country railroad station and does his work satisfactorily to the railroad and is able to support himself and his children, of whom there are many.

We are anxious to get on record of having it known that we do advise braces in Charcot's joints, especially as we frequently receive letters from doctors who have examined these cases of ours, stating that we probably did not recognize that we had applied a brace to a Charcot's joint. We always feel like labeling these patients in some way so that the doctors may know that we know we have applied a brace to the Charcot's joint. We are inclined to do this just for the protection of our reputation.

The sub-division of the various deformities according to the etiology and pathology we are sure is far from correct in this article, as an orthopedic surgeon is not expected to make such divisions as accurately as a neurologist would be able to make them. However, we find that in looking this subject up, surely the neurologists must be very much confused as their books and articles differ so in regard to the division and sub-division. All we have attempted to do is to regard them clinically and suggest the orthopedic treatment for the same.

Finally, there are two reasons why this article is presented to this society. First, to bring to the minds of the general practitioners that there are many forms of children's diseases causing inability to walk which are not in any way connected with, and ought not in any way to be confused with, anterior poliomyelitis. Second, in these incurable cases, life and happiness can be prolonged in many instances, and in many cases useful men and women develop who otherwise would be hopeless, dependent cripples.

DISCUSSION.

DR. WALTER R. RAMSEY, St. Paul: Mr. President: I wanted just to say a word, particularly about this wonderful clinic that is going about the state in the interest of these crippled children. I did not hear all of Dr. Gillette's paper. He probably told you about how it happened that the state legislature gave \$25,000 a year for this work of preventing and studying, and also doing something for these crippled and deformed children.

I was very much afraid when I did what I could to get that passed, that it might be like a lot of other funds that might be used to little purpose, and so I was very much interested in going to the clinic when it came here, and I must say that I never was so much impressed in my whole life as I was at that demonstration at that clinic.

In the first place, it was interesting to me to see how an intelligent trained nurse could become so wonderfully efficient in the work of testing out the muscles of these children. I went up there very frequently. There were a great number of children who came, and many came accompanied by their doctors, and it was interesting to watch the faces of those doctors when the nurses, with Dr. Greene in control of the clinic, went about it in the A, B, C method, rapidly testing out those groups of muscles and dictating the muscle tone, to determine whether it was normal or abnormal, and all the things that were involved in it, to a clerk. It was done systematically, and it was perfectly surprising to me in how many of these cases it was demonstrated definitely what groups of muscles were involved or what muscle; and the definite prompt instructions, with a little demonstration, that were given to the parents, to do something for those children.

Also it was a wonderful education to the doctor usually. Ordinarily, he knew the child had some paralysis but what muscle or group of muscles were paralyzed, he had not thought much about. And he generally also thought that there was not much to be done about it.

I remember several cases, and one in particular, for instance, where the deltoid muscle had been somewhat involved, and simply owing to the disuse, that hand hung just like a flail, and the muscle had almost entirely atrophied. Mrs. Greene, who, by the way, was wonderfully efficient and had trained some others who were soon equally efficient, in a very few minutes demonstrated that there was a certain amount of function in that muscle, and that the tremendous atrophy had been simply due to disuse. In a very few weeks, by the simplest instructions to those parents—a little given exercise, to be increased every day and week—the result was a very good functioning muscle.

I happened to know of a number of patients whom I had seen in Northern Minnesota for the last ten years. I had just seen them to make a diagnosis

then, and had not seen them since, but I took it upon myself to write to those people, and tell them to be sure to go to Duluth or any other place, so that they would surely get to that clinic; it made no difference whether they were rich or poor, they ought to go, and I really think it was the most wonderful thing that could have been done.

DR. W. P. GREENE, Minneapolis: Clinics were held in sixteen places in the state. There were examined, stripped, 1,051 children and adults. Out of that number 462 of the cases were before the year 1916. Four hundred and seventy cases were in 1916. In 1916 we had 912 cases of poliomyelitis in the entire state; but there were a large number of mild cases reported, with many recoveries. One hundred and ten of those examined in 1917 were found not to be poliomyelitis. Forty-two had a spastic form of paralysis. Seventeen gave a history of meningitis. Seventeen were cases of birth palsy. There were 2 cases of muscular atrophy, 1 of congenital hip, 1 of tuberculosis of the hip, and several of osteomyelitis. In 12 cases we were unable to make any diagnosis.

Diagnoses were made from the history of the case, given by the mother, by the doctor, and from a complete examination of the case, including testing the muscle reflexes.

A good many cases were not stripped because we found that there was a spastic condition present, or because we were positively sure it was not infantile paralysis. Probably in all, there were 10 per cent of them that were not poliomyelitis.

There were very few, even in the old cases, that the examiners thought could not be benefited by some sort of exercise. One hundred and fifty-four cases were either hopeless or had entirely recovered. One hundred and forty-eight were referred to their physician who was to operate them or refer them to an orthopedic surgeon for operation.

We did nothing along the line of braces. Sometimes the examiners would suggest to the family physician that they might need a splint.

I think this coincides with Dr. Gillette's opinion that a good many of the cases are not poliomyelitis, and it would be much better to use the term anterior poliomyelitis instead of infantile paralysis. The mother or the father thinks that if it is an infantile paralysis clinic, that all of these other cases must be that. Of course we could do nothing for them. Generally we referred them to an orthopedic surgeon or a neurologist.

DR. E. J. HUENEKENS, Minneapolis: I have enjoyed this very instructive paper very much. After such a paper there is very little that can be said.

There is one thing I am sorry the writer did not say much more about, which is very interesting to us, and that is the obstetrical paralysis that does occur rather too often, and unfortunately is a very embarrassing thing to the physician and the pediatrician.

There are two forms of it. The paralysis of the seventh nerve of the face is one; this gets well of itself.

Another distressing and much more common form of paralysis during delivery is paralysis of the arm. This last form of paralysis is divided into the upper arm and the lower arm type. We can all recognize that deformity by the peculiar curve of the hand, just like a policeman holding out his hand for a tip. Unfortunately, it gives us much trouble to treat this condition. There are at present two forms of treatment; one is immediate operation; and the other is to let the condition wait until nature has done all that she can to correct it, and then to try to help it by nerve anastomosis, muscle cutting, and muscle transplantation.

Another form of so-called paralysis which I do not think was mentioned, is the so-called pseudo-paralysis of Lewis. We often see those cases. They are often sent to us as cerebral palsy. An infant during the first few months of life holds its hand and leg in this way (illustrating). It is sometimes taken for infantile paralysis. Sometimes and oftener it is diagnosed by the general practitioner as cerebral palsy. It is very important to recognize this, because if properly treated they will get well, and get well very promptly. If improperly treated, the process goes on and causes considerable destruction. I have seen complete destruction of the lower end of the radius and ulna, and dislocation of the wrist.

Another form which I do not think the doctor went into in detail is the so-called myotonia congenita. That is the form the neurologists tell us about where a child is born with a relaxed muscle. I will not go into the pathology of the condition, but will only mention that this is a field where the orthopedist can help a great deal.

DR. C. E. RIGGS, St. Paul: It is well to remember that spasticity does not necessarily eliminate infantile paralysis. While the force of the virus is usually spent upon the cells of the anterior horn of the cord, the infection in rare cases involves the whole cord, and in occasional instances there will be a spasticity present. This is such a practical paper that I hope we will not allow it to pass without more being said upon it.

DR. W. E. RICHARDSON, Slayton: The essayist advocates that braces should not be put on in spastic cases. I would like to ask if there is any harm in putting on the old-time Buck's extension? Also, in

cases where paralyzes have occurred from the use of instruments on children's heads, how long after the instruments have been applied can you blame the instruments for the paralysis? In some cases the paralysis does not come on until eight or ten years afterward. Can you then go back and blame that on the instrumental delivery?

DR. GILLETTE: No, sir.

Q. Will you tell us a little more about the muscular atrophy? Is it hereditary, in your experience? Do you know where entire families have had it?

DR. GILLETTE: Yes, sir.

DR. A. J. GILLETTE (closing the discussion): I want to get in a word in regard to Charcot's joint. I am anxious to get on record on that, because I have had some doctors drop me a line telling me that a case of mine had come into their practice and that I was about to put a brace on a Charcot's joint. I simply state that I have put it on in ten different cases anyway, knowing full well what I was doing. You cannot amputate these. The paralysis exists just the same farther up in the body where they are not able to lose the limbs. And the incisions will not unite. You can put on braces and hold the joint perfectly stiff, as this joint always is lax and loose and easily dislocates, and they will get about for many years with that stiff joint in a brace, which they would not do if they did not have this.

I wanted to call special attention to that fact, that I was putting braces on Charcot's joints.

Then in regard to Buck's extension; do you mean in spastic paralysis, doctor, or in infantile paralysis?

DR. RICHARDSON: No; spastic.

DR. GILLETTE: If the case is so mild that you can cure it by weight and pulley extension, you can easily put on plaster of Paris, and my experience is that it is better to have the muscles divided; and that you will have difficulty with a cast and with the weight and pulley, and that a division of the tendons is better, because with a pulley off, the spasms again begin, and even with it on, unless you have a very little weight.

Of course, the cases of obstetrical paralysis—is that what you asked about?

DR. RICHARDSON: Yes.

DR. GILLETTE: They appear right at the time of birth, or right after, but frequently it is not observed until the child is five or six, or sometimes twelve months old; but there is no occasion for it to be confused with the other form.

HARELIP AND CLEFT PALATE.*

G. B. NEW, M. D.,
Mayo Clinic, Rochester, Minn.

Harelip and cleft palate are congenital malformations due to the failure of union of the parts that form the lip and the palate. The palate is formed from the globular and the maxillary processes of the mandibular arch; the lip is formed from the globular, the lateral nasal, and the maxillary processes. While several theories have been advanced for the lack of fusion of these parts no definite cause seems to be known.

Heredity may have some bearing on the condition since in a small percentage of cases a hereditary tendency to deformities is noted in families. Sometimes a parent and child are deformed and, again, different children in the same family may have harelip and cleft palate. In 14 per cent of the cases of harelip and cleft palate seen in the Mayo Clinic there is a family history of the occurrence of the condition. In 4 per cent a brother or sister has a harelip or cleft palate and in 10 per cent the parents or ancestors have been so deformed. In one family three children had harelip and cleft palate.

Many types of both harelip and cleft palate are seen. The lip may be fissured on one or both sides, and there are all grades of deformity. In a slight deformity the musculature of the lip may be thinned out, a groove being formed from the nostril to the vermilion border with a slight notch in the lip, or there may be a complete unilateral harelip with flattening on one side of the nostril and separation of the alveolar process. The double complete harelip presents a marked deformity in which the nostrils are flattened. The filtrum and the premaxilla extend forward and are attached to the tip of the nose. The palate also may vary in the type and in the extent of the cleft. The alveolar process may be notched or the cleft may extend completely through the hard and soft palates; the uvula may be bifid or the soft palate may be cleft. The parts of the palate

may be widely separated as seen in a double cleft palate.

The age at which the child with a harelip and cleft palate should be operated on and the operation which should be done first, are much debated questions among the various men performing these operations. Moreover there are many types of operations for these deformities. I will not attempt, at this time, to discuss the advantages and disadvantages of different methods, but I will describe the procedure which, with slight minor modifications from time to time, has been employed for many years at the Mayo Clinic.

We prefer to close the lip first when the child is between three and four months old, if he is gaining weight and doing well. Children are operated on earlier than this, but results are not so satisfactory. From three or four days to a week before the operation the child should be fed with a spoon or dropper to accustom it to this method of feeding, since of course, after the operation, it is not allowed to nurse from the bottle or the breast. When there is a cleft of the alveolar process, as in the complete single harelip, the lip is brought together over it, but no attempt is made to approximate the alveolar process. The same procedure is used in the treatment of the premaxilla. In a case of double harelip the lip is brought together over the premaxilla and its normal rounded appearance is maintained. If the alveolar process is forced back in the single harelip or if the premaxilla is removed in the double harelip or a wedge-shaped piece is taken out of the vomer and the premaxilla forced back, the lip will be flattened and it will be almost impossible to correct the deformity. When united, the lip gradually presses back the alveolar process or premaxilla into its normal position, giving the normal rounded contour to the face and the correct alinement to the teeth.

A satisfactory cosmetic result is obtained only when the nostril has been shaped to correspond to the normal side. To do this the nostril should be made a little smaller than seems best at the time of the operation, since the cartilage tends to spread a little within a few days. It is also essential that a line drawn underneath the alae of both nostrils shall be at right angles to the mid-line of the face. The ver-

*Read before the Southern Minnesota Medical Association, Faribault, Minnesota, July 24, 1917.

million border must present a continuous line without a notch and there must be as little scarring as possible on the outside of the lip. To prevent the scarring it is best to avoid tension sutures which pass through the skin on the outside of the lip. The lip and cheek on both sides should be well freed from the underlying bone so they will fall together readily without tension.

The time for closing the palate is when the child is from a year to a year and a half old,

before it has begun to talk. Many operations are performed much later, however, with quite good functional results. Adults from 20 to 30 years of age have had their palates closed, and the functional results have been very good. If the lip has been approximated at the proper age the alveolar process will have become approximated; the cleft of the rest of the palate will thus be narrowed and made easier to close.

The edge-to-edge approximation or the Langenbeck operation is the operation of choice for

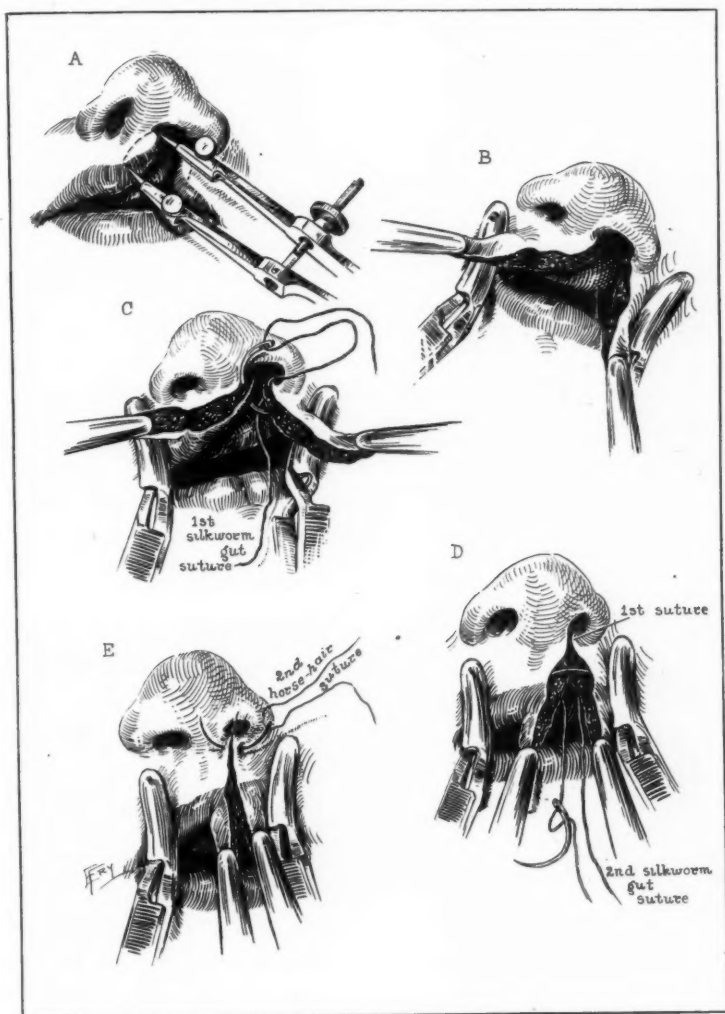


Fig. 1. A. The calipers determining the length of lip on either side and the points on the vermillion border to be approximated. B. The muco-cutaneous margins have been pared and the lip freed from the bone. Small clamps on either side of the lip to control bleeding. C. First silk worm gut suture inserted from the inside. It does not pass through the skin. D. First silk worm suture tied approximating the nostril. The second silk worm suture in place. E. Horsehair sutures approximating skin.

the closure of cleft palate. With this method as much of the palate is approximated as may be accomplished without tension at one operation, the remainder being closed later either by an edge-to-edge method or by turning a flap. Failures are frequently due to the attempt to close too much of the palate at one time; in such cases tearing out of the stitches results. When the palate begins to pull out with tension, the tear may often extend into the part of the palate that would otherwise have held together. It is sometimes possible to close a soft palate with the edge-to-edge approximation method, but the hard palate may require a flap operation. We do

not like to use the flap method primarily except in certain wide clefts, usually double clefts that cannot be closed satisfactorily in any other way.

It would seem that the most important factor necessary to success in operations on cleft palate is a thorough knowledge of the blood supply. In making the lateral incisions it is essential that they be made as close as possible to the teeth or to the alveolar process, so that the main branches of the great palatine artery may not be injured. These are not the long lateral incisions to which the term is usually applied but are just long enough to admit the palate elevator for elevating the palate. It is also necessary to thoroughly free the muco-periosteal flaps. In doing this the posterior margin of the hard palate must be freed from the soft palate so that the two portions of the palate may be approximated without tension.

In closing a cleft of the soft palate the same principles hold good as are used in closing the complete cleft palate. Also in these cases the posterior margin of the hard palate should be freed from the soft palate.

Technic of Harelip Operation.

The child is anesthetized with ether by the drop method, and is kept asleep with chloroform administered on a gauze sponge. Older children are given ether vapor through a cannula at the side of the mouth.

In operating on the single harelip a point is selected on the median portion of the lip at the vermilion border where the lip should join the opposite portion. The location of this point depends on the type of the lip as regards its thickness and the amount of tissue present, and on the experience of the operator. A small nick is made with a knife in the skin at this point. Calipers are then used to measure the distance from here to just inside the ala of the nose on the same side. This distance fixed, one point of the caliper is placed just inside the ala of the nose on the outer side and the other point at the vermilion border. In this way the points of the vermilion border which are to be approximated are definitely fixed and the two margins to be approximated are made the same length. Thompson, I believe, was the first to suggest the use of the calipers for the purpose of meas-

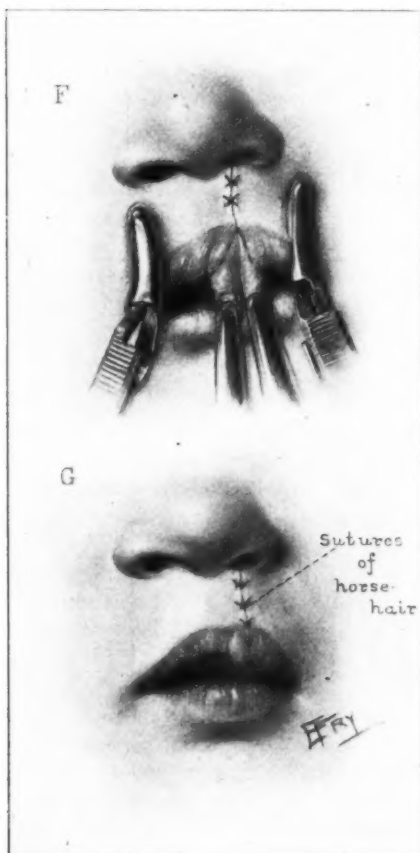


Fig. 2. F. The lower lines show approximately where the parings are cut. G. Lip completed with horsehair sutures. Note the fullness of the lip along the suture line and the slight pouting of the vermilion margin.

aring definitely the free margins to be approximated. A curved incision is made through the skin on either side, the mucocutaneous border being pared from immediately within the nostril down to the fixed points on the vermillion margin. The parings are left long, and their

ends are fixed with small stomach clickers. The use of traction and pressure, applied on either portion of the lip along with small clamps applied about an inch back from the freshened margin, is the best method of controlling bleeding. It is essential that the lip

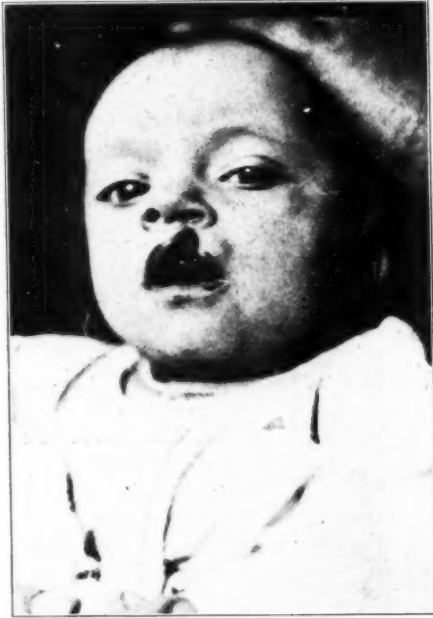


Fig. 3 (192255). Harelip incomplete before operation. Fig. 3A (192255). Same as Fig. 3. After operation.



Fig 4 (177516). Hairlip. Note marked flattening and deformity of nostril.

Fig. 4A (177516). Same as Fig. 4. After operation.



Fig 5 (181430). Front view. Note unsightly notch and flattening of nostril.



Fig. 5B (181430). Same as Fig. 5 Front view. After operation.



Fig. 5A (181430). Same as Fig. 5. Side view.



Fig. 5C (181430). Same as Fig. 5. Side view. After operation.

portions on either side should be well freed from the bone so that the two portions fall together quite readily, but it is not advisable to cut into the septum to do this.

Tension sutures of silkworm are used. The first suture is placed just inside the nostril, being passed in through the mucous membrane and brought out beneath the skin or the outer portion of the lip just inside the ala of the nose. It is then put in again just beneath the skin and passed out through the mucous membrane on the central portion of the lip close to the septum. When this suture is tied the flattened nostril is rounded up into shape. Two silkworm sutures are used to approximate the lip and these are tied on the inside of the lip. As they do not pass through the skin there is no scarring from the tension sutures. Horsehair

sutures are used to approximate the skin. After the upper two-thirds of the lip is approximated the surplus of the pared edge is trimmed off and the lip closed with horsehair. In order to avoid an unsightly notch, it is necessary to leave a little excess of tissue at the lower part of the vermilion border so that the lip pouts a little. This is best accomplished by leaving the parings long until most of the lip is closed, when one is better able to judge how much should be excised. (Figs. 1, 2, 3, 3A, 4, 4A, 5, 5A, 5B, and 5C).

Technic of Cleft Palate Operation.

After the child is anesthetized the head is brought over the end of the table and allowed to rest in the lap of the operator, who sits on a stool at the end of the table. A Whitehead

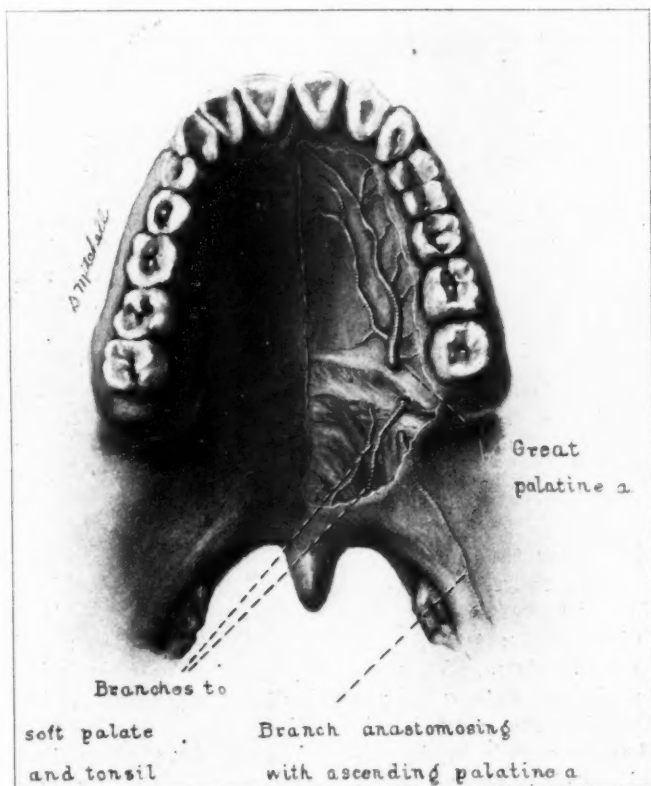


Fig.6. Blood supply of the palate. Note the relation of the great palatine artery to the alveolar process, also the branches to the soft palate.

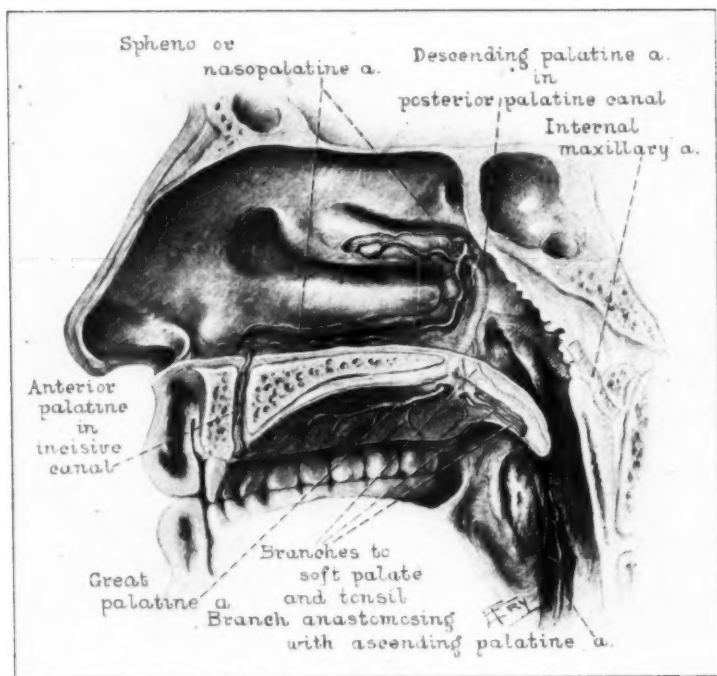


Fig. 7. Blood supply of the palate. Note the position of the great palatine artery and its anastomosis

mouth gag is used and with a tongue depressor the tongue is lifted giving a good exposure of the palate.

In closing a single cleft palate an incision is made on either side close to the alveolar process or teeth, and carried down to the bone. It is just long enough to admit a thin, blunt periosteal elevator. By keeping the incision close to the alveolar process or teeth the posterior palatine artery is avoided. Injury to this artery may interfere with the blood supply of the flap.

With a periosteal elevator the mucoperiosteum is elevated over the entire hard palate down to the cleft. With a scissors the soft palate is liberated from its attachment to the posterior margin of the hard palate, and the entire mucoperiosteum of the palate margin is freed as much as possible. The soft palate is attached to the hard palate margin by the palatine aponeurosis and there is no danger of cutting any important vessels at this point. The freeing of the posterior margin of the hard palate from the soft palate is very important either

in closing a cleft of the soft palate or in a complete cleft palate, since it is advisable to sever this aponeurosis in order to approximate the margins of the palate. The mesial margins of both sides of the palate are freshened by fixing the uvula with a stomach clicker and trimming the mucous membrane from the free margin with a scissors or knife. The procedure is begun posteriorly and extended forward.

Silk sutures are used, the first one, a mattress suture, being placed at the juncture of the hard and the soft palates. From this point the rest of the soft palate and uvula are closed by interrupted sutures along the oral and nasal mucous membrane. By leaving the ends of the sutures long and fixing them with forceps as they are put in, the uvula is brought up into the mouth and the insertion of the sutures is made easier.

The completion of the closure of the hard palate is accomplished by mattress sutures, usually two, and occasionally an interrupted suture. It is best not to use too many sutures in approximating the margins of the palate; if the

tissues have been thoroughly freed they usually come together of themselves.

If it is necessary to employ the flap method to close part of the palate the technic employed by Lane, or that of turning a flap and suturing it under the opposite side of the palate with mattress sutures is used. (Figs. 6, 7 and 8).

Post-operative Care.

Following the operation for harelip a strip of adhesive plaster is placed across the cheeks

over the nostril and another one across the cheeks over the chin in order to relieve the tension on the sutures in the lip. Horsehair stitches in the lip are removed in about four days and silkworm stitches in about a week. In cases of cleft palate the patients are not allowed to have anything but fluids which are given with a spoon or dropper. The sutures usually slough out but if some remain at the end of ten days or two weeks and the child is leaving for home, they are removed.

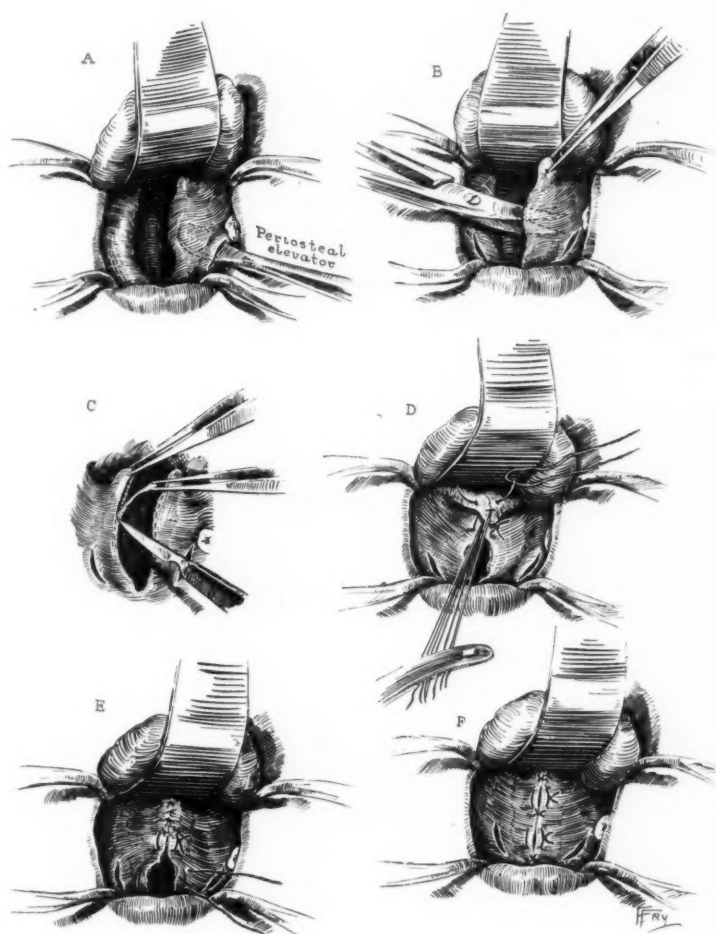


Fig. 8. A. Periosteal elevator freeing muco-periosteum from hard palate through incision in alveolar process. B. Scissors separating posterior margin of the hard palate from the soft palate. C. Paring the mesial margins of the palate. D. Soft palate and uvula approximated. Sutures left long and fixed with a forcep. Suture in place on the nasal surface of the uvula. E. Soft palate completed. F. The palate completed. Mattress sutures and occasional interrupted sutures.

DISCUSSION.

DR. R. E. FARR, Minneapolis: Dr. New has given us as comprehensive a resumé of this subject as is possible considering the time consumed. He has called attention to many of the essential principles which must be adhered to in order to obtain results which are at all satisfactory.

I do not believe there is as large a percentage of failures in any other field of surgical endeavor as there is in the treatment of these cases. In my experience it is the rarest thing to see a satisfactory result. The closure of the lip is a simple plastic operation. Secondary operations upon the palate present such a diversified array of conditions that it is difficult to lay down rules to fit them all, but in general they should be treated on the principles laid down by Dr. New.

I shall limit my discussion to the child born with a complete cleft between the alveolar processes. With regard to the method of handling these cases I must disagree somewhat radically. In the tripartite type, you remember, the nose remains in the center line and the premaxilla protrudes. I agree with Dr. New that the removal of the premaxilla is nothing less than a calamity. I also agree that it should not be forced backward between the alveolar processes with the inevitably resulting fish mouth. I do believe, however, that it is desirable in these cases to establish a bony union between the premaxilla and the two alveolar processes after the latter have been approximated to a proper degree. A nearly normal bony roof may thus be formed. The simple closure of the lip—while it does narrow the arch somewhat—never gives a bony union between the parts, and leaves a much more difficult operation when the palate is closed. An examination of the bipartite cases will show that the midline of the face divides the ala of the nose at about the mid-point, whereas it should divide the nose in the center. In every case of this type that I have examined, where the lip was closed in infancy, the nose shows this deformity to some degree. The alveolar arch does not unite in front and I believe does not develop as well when there is no bony union between the alveolar processes. On the other hand, early reposition of these processes with the establishment of bony union between them allows one immediately to close the hard palate, brings the nose at once to the mid-line of the face, makes the lip operation more simple and easy, and, what is most important in view of the failures that occur, overcomes the almost unsurmountable obstacles to later closure of the palate. In cases that are handled this way there is always more soft tissue than is necessary and lateral incisions need never be made.

The plan I advocate, therefore, is as follows: The immediate reposition of the displaced parts, which may be bent with the thumbs during the first few days or weeks of the child's life; closure of the lip from six to ten weeks later, and a closure of the pa-

late as Dr. New states, between the ages of twelve and eighteen months, preferably just before the child begins to talk.

SOME POPULAR FALLACIES REGARDING PEDIATRICS.

WALTER REEVE RAMSEY, M. D.,
Assoc. Prof. of Pediatrics, University of Minnesota.

To say that the child is the most important element in the future of the state is axiomatic. There never was a time when this fact was so apparent as now, and yet there is no department in the whole field of medicine which is so neglected by the medical profession generally as that of pediatrics.

Up to a few years ago there was little exact knowledge concerning the fundamental principles underlying the field of pediatrics, but today the care and feeding of infants and children rests upon as solid a scientific foundation as does general surgery.

There is perhaps no department of medicine where tradition still plays so prominent a part as in the care of children. The fatalistic and to a great extent false doctrine of "the survival of the fittest" has been slow to be discarded and rational science applied in its place. It is an every-day occurrence to hear statements made by prominent physicians relative to pediatric subjects, which in the field of surgery would be comparable to a return to the carbolic spray of Lister.

The common error in believing that new-born infants must be bathed as soon after birth as possible is responsible for many deaths. This is especially so in those who have been subjected to a long labor, to considerable exposure in the process of artificial respiration or for some other reason. Young infants lose body heat rapidly when exposed to cold, resulting in subnormal temperature, a marked lowering of vitality and frequently in pneumonia. Such new-born infants should be rubbed with warm oil, wrapped in warm blankets and allowed to remain from twelve to twenty-four hours in a uniform temperature of from 75° to 80° F.

without bathing. The diffuse intense redness of the skin so frequently seen after the second or third day usually results from too much friction in the effort to remove the vernix caseosa, and the use of improperly neutralized soap.

Another popular fallacy is that the mouth of the infant beginning with birth should be daily swabbed, the common technique of the nurse being to stretch a piece of gauze over the index finger and with more or less force wipe the inside of the mouth as thoroughly as possible. This is perhaps the most common cause of stomatitis. The gauze removes portions of the delicate epithelium and wherever removed a white patch of exudate results. The mouths of infants do not need swabbing, unless they are already diseased, until the teeth come through, after which the teeth should be brushed daily.

The practice of putting the baby to the breast every two or three hours during the first days is also erroneous and responsible for many failures in nursing. The colostrum is laxative in character and usually, although not always, scant in quantity. In cases which are fed frequently during the first days a diarrhoea with curdy green stools often results. A dyspepsia which occurs at the onset, often results in a marked intolerance to food which is difficult to overcome and frequently leads to weaning.

The common practice of ordering a dose of castor oil for the baby on the third day cannot be too strongly condemned. Its effects are more or less irritating, it sweeps the intestinal canal clean so that no natural movement can logically be expected for several days, since the secretion of milk has hardly been established at that time. Owing to a lack of knowledge on the part of all concerned the first dose of oil usually leads to a second and third to be followed by enemas and suppositories when the bowels fail to move on the succeeding days. Finally serious intestinal irritation is set up with green, frequent, curdy stools. After a short time the milk is adjudged "bad" by the physician and the baby is weaned. Injections, including enemas and suppositories should almost never be given young infants. Breast-fed babies may go several days without a movement without any disadvantage and if allowed to do so will rarely suffer from constipation. The stools in breast-fed infants are rarely even

semiformed so that a sufficient effort will be made to produce an evacuation when enough fecal matter has accumulated in the rectum to produce sufficient stimulus.

The prevalent idea among physicians that many mothers cannot nurse their babies is false. At least 90 per cent of mothers can nurse their babies in whole or in part for the whole or a part of the first year. Because a mother has insufficient milk is no reason for weaning the baby. It should be given all she has and the remainder of the meal made up with properly modified cow's milk. The failures in nursing are nine times out of ten due to faulty technique and a lack of observance of the simplest and most fundamental rules.

There is, practically speaking, no such thing as bad breast milk. A baby which is having frequent green curdy stools on breast milk has simply been having "too much of a good thing."

An analysis of a portion of the milk, or even the whole content of one breast gives usually fallacious information. The fat content of different portions of the milk from a breast differs widely. It differs widely at different nursings and on different days depending on the food of the mother, whether she is tired or rested, as well as upon her mental condition. Such examinations frequently result in the milk being adjudged "too rich" or "too poor" and the baby weaned.

Infants who are gaining properly in weight are always getting enough food and frequently too much. Many cease gaining until the amount of food has been properly reduced.

Before weaning a baby remember that the death rate in artificially fed infants is from seven to ten times greater than in breast-fed babies and that by proper technique babies may be kept on the breast at least partially in almost all cases. Open tuberculosis of the mother is one of the few things which will excuse her from nursing her baby.

Regarding the artificial feeding of children, which too often becomes necessary, many erroneous ideas are prevalent. That cow's milk or any other food, patent or otherwise, can be juggled in its percentages to even approximate

human milk in its effects, is false. Clean cow's milk when properly modified, is the best substitute for mother's milk. The patent foods with high sounding names which are used to modify cow's milk or used alone, are almost invariably some form of carbohydrate, usually malt sugar, starch and dextrine, and have no advantages over these simple, easily and cheaply obtainable, articles. Any food which has not milk as a base is a dangerous food for infants for any length of time and frequently produces a type of baby seen on the bill-boards but nevertheless *usually suffering from rickets*.

The common belief that the curd of cow's milk is the element most difficult of digestion is erroneous. The fat is the element producing most difficulty in digestion, the curd giving trouble in a mechanical way only if unboiled or undiluted. Many of the cases of malnutrition in infants begin from overfeeding with fat. The pale, hard stools so frequently seen in children fed on cow's milk, and thought to be due to an absence of bile, are made up largely of fat, in the form of calcium and ammonium soaps. Such infants when put on a fat-free diet with carbohydrates, usually improve rapidly. The acute intestinal diarrheas of infants during the summer months are usually due to overfeeding and are primarily an intoxication but have nothing to do with teething, contrary to what grandma and some physicians would have us believe.

That infants should be fed wholly upon milk for the first year and largely for the first two years is also fallacious. Infants fed exclusively on milk for the first year are usually pale, flabby and lacking in tone, and will be much improved if given some extra food after the sixth or seventh month. After the first year the child should have a good mixed diet and this diet may be supplemented by milk in limited amount.

There is no other animal except the human who has an exclusively milk diet for even seven months and none who have any milk at all (from the mother) after the first year.

The giving of sweets in the form of candy in any amount is, contrary to the popular idea, usually injurious to children especially if given between meals. They stimulate a craving for

highly seasoned foods which tickle the palate, rob them of their appetite for the plain things upon which their nutrition depends, and frequently set up serious gastro-intestinal disturbances.

The almost universal idea that heating or boiling milk destroys, or at least injures it seriously as a food for children is also erroneous. Pasteurizing at 160° F. or boiling milk for three minutes, does change it somewhat, but does not seriously detract from its food value. When boiled milk is given, some uncooked fruit or vegetable juice should be given daily. That milk is one of the most common carriers of disease has now been definitely proved and there is no cow's milk wholly safe as a food for infants unless it has been first properly pasteurized or boiled.

I have mentioned only a few of the hundreds of fallacies so prevalent among the profession, simply to emphasize the necessity in the interest of public health and the physician himself, of eliminating them. Much of the work now being done by pediatricists should be done by the general practitioner. There is no department of medicine which will pay such high dividends in results to the patient and the community, nor one which will cover the physician with more glory in the knowledge of real achievement, than the careful, scientific study of the children in his practice.

DISCUSSION.

DR. J. T. CHRISTISON, St. Paul: Mr. Chairman and Members of the Medical Section: I think Dr. Ramsey ought to be thanked by the pediatricists for his mild mannered roast, so to speak, of the general practitioner.

We are accused wrongfully, most of the time, of attempting to interfere with the general practitioner's method of handling, especially the feeding, of infants. One might cite instance after instance, where the general practitioner, owing to a lack of time or a lack of interest, if you please, says to the mother who complains about the food not agreeing with the child, "try this," or "try that," and puts on his coat and goes about his business.

We see every day, infants suffering from indigestion, bad stools and vomiting, simply because of the fact that the general practitioner has overlooked the simplest methods that the pediatricist of today employs in infant feeding.

Combinations of foods, top milk, ordinary milk, lime water, milk sugar, in the most wonderful mixtures, are given to children, with the idea that the breast milk is not good for them because of the mother having too large a supply, overfeeding results and consequently the milk is not good, and they resort to those things. And they are not wholly to blame. The mother frequently asks the pediatricist if there is not some patent food that she can give the child. And who is to blame for this? Largely the food manufacturer. When the new baby comes to the house, that mother, within the next few days is flooded with all sorts of circulars and samples of this, that and the other food; and she reads them and becomes imbued with the idea, "that there is no use of my nursing my child when one of these foods, mixed up with a little water, will be infinitely better for the baby?"

I would say right here, and without any fear of contradiction, that the greatest value possessed by the patent foods of today lies in the money that accrues to the manufacturers of those foods.

The simpler the method employed in the feeding of the baby, the better for the child. If the infant is unable to digest the fat of milk, give it skimmed milk. We have more cases of rickets and things of that sort as the result of these patent foods and the feeding of them, than we do as the result of all the other causes combined.

Dr. Ramsey has also mentioned a number of other things that I would like to lay a little stress upon if I may be permitted. One is the frequent washing of the child's mouth. You do not find any nurse or any mother turning down the eyelids of the child and washing out the eyes every day. Nature provides a secretion which thoroughly and completely takes care of that; and so it is with the mouth.

One might dwell at length upon a number of fallacies. The doctor mentioned the hurry-up question of bathing the baby. It is our practice, as a rule, not to do this until the child has become accustomed to the change in temperature. Remember, if you please, that infant has lived for nine months in a temperature closely approximating one hundred degrees. It comes into an atmosphere with a temperature varying all the way from sixty-eight up, and it has to accustom itself to these differences, and if it be put into water and allowed to remain uncovered for any length of time, the body temperature goes down, and it is a very hard thing to get it back again.

I did not come this morning prepared to discuss this paper, but it impressed me as being one of the best things we have had for a long time, and if you will only stop and give these matters a little consideration it will be so much the better for the baby and the child, as they grow up and develop into proper manhood or womanhood.

DR. J. W. ANDREWS, Mankato: I have only a word to say upon this. There are some new ideas here, to me.

I do very little obstetrical work now. Unless I am rather forced into it I do not do it at all; but I have done a great deal, and I have given instructions very often as to the care of young babies. I never have followed out in detail the instructions suggested here this morning. Some of them are new to me. But this thought occurred to me, and I am not criticising the essayist a bit. The profession is to blame for two things; and sometimes I almost get out of patience with my professional brethren for these things.

First. If a woman has a hard labor, the attending physician will tell that woman that she ought never to have another. That is all wrong. It is bad advice, and I think there is no physician here present but who has met with that difficulty. A pregnant woman comes to the doctor's office and wants something done because "I am not going to have a baby again. My physician has told me I must not have." Such advice should be very carefully given by a physician.

Another is: "You are not able to nurse your baby. You ought to wean it." A physician should feel his responsibility and be mighty careful about how he gives advice of that kind. We all know, and we are coming to know more and more, that the baby should have the mother's milk for at least the first six months if not the first year.

As to bathing the baby in oil for the first twenty-four or forty-eight hours and not washing it, that is new to me, but the reasons given seem to be good. I do not know whether, in the country, we can induce the mothers or rather the nurses, to wait that long or not. The nurse generally wants to take the baby just as soon as it is separated from the mother, and take it into the kitchen where it is warm, and wash it. That is bad practice, is it? So we learn this morning; and probably it is. I believe it is. I am willing to accept the new teaching if it seems reasonable.

DR. WALTER R. RAMSEY (closing the discussion): I did want to simply emphasize the importance of the general practitioner fitting himself to do pediatric work, just as well as he fits himself to do surgical work and work in other departments of medicine. The average man thinks that he must go away and take some post-graduate work every year, and he will, if he is the right sort of a chap, but he ought to devote as much time to the subject of pediatrics as he does to any other department, because there is no other department in the field of medicine which is so important, so fundamental, as the care of these children.

Somebody—I think it was Dr. Sedgwick—used the phrase, that the baby was a by-product of the practice of obstetrics; and that is perfectly true in many cases.

I think the doctor said that I did not get many of her cases, and that is very good, but it would be a good thing,—I do not mean in her case, but I mean

it would be a good thing in many other cases that doctors either fit themselves to take care of these children properly or else turn them over to somebody who does know how. We have that experience every day at our "Child Welfare." There is not a week when I am on service that the head nurse does not bring me a patient and show me the history card; the woman is well dressed and so is the child. And this history says that the husband of this person is getting \$75 or \$85 a month. Are these people to come here? It is designed of course for poor people. I say, "Send them to their own physician." We have done that consistently for years. What happens? We send them back to their own doctor, and in a week they are back to us again for free treatment. And why? Not because they are too poor to pay their doctor, and they are willing to, but they do not get results. The doctor does not examine that baby. He writes a prescription for calomel and tells them to give it a dose of castor oil; and they go back home and the condition is not righted; and they come to us again for treatment, and we take care of them, and after that we do not feel any obligation at all towards the doctor who does not fit himself to take care of children.

About this question of bathing, which Dr. Andrews mentioned, I did not say in my paper that all cases should go for from twelve to twenty-four hours. I said this, that many of the cases that have had long labor, and where the conditions were not favorable, and where for instance the whole body was covered with a thick covering of vernix caseosa, which adheres as firmly as cheese, that those children should be put away for from twelve to twenty-four hours, and anointed with warm oil, and that it is not necessary to remove all of the vernix caseosa at one bathing. It may take a week.

And just now, at the University Hospital, where they have many new-born children,—I told one nurse to observe so that the obstetrical nurse would not know that she was being watched, regarding the handling of these cases which have developed an acute dermatitis after bathing,—they look like broiled lobsters. They are covered with a little fine rash, and the skin is intensely red. In other words, they have an acute dermatitis. And in every case, as I have suspected, I have learned that those were cases which were covered with vernix caseosa; the nurse used a lot of friction to get it off with water and soap, and it resulted in a dermatitis.

My idea was not to say that all children should go from twelve to twenty-four hours, but that these cases which are covered with much vernix caseosa and those which had a long labor should be anointed with warm oil, and they may go from twelve to twenty-four hours to great advantage.

A CONSIDERATION OF THE TONSIL QUESTION.*

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To bring more closely to your attention the anatomical aspect of the tonsil region, I will ask you to look with me into the pharynx of a patient when in the act of swallowing or gagging, and note the fineness of adjustment and smoothness of movement of each department in its contribution to the complex musculature of the throat. The palate is drawn upward by the levator muscles, and the posterior pillars or palato-pharyngei assist to hold it against the posterior wall, then the superior constrictors push in the folds of the posterior pillars to close up the pharyngeal isthmus. The anterior pillars or palato glossi act as supports to hold the palate tight and to pull it down again quickly at efforts of speech, assisted in this action by a backward and forward movement of the tongue, to which it has attachment. The tonsil on either side, divided into upper and lower lobes, lies in a triangular fossa with the superior constrictor muscle as a base below and behind, and the two pillars on the sides. It appears, therefore, to have a mechanical duty to perform. Together with its fibrous capsule, it supports the action of these muscles, keeping them separate and taut as their fibres ply over and around it.

While it is important in tonsillectomy to preserve the pillars intact, the superior constrictor muscle deserves the greatest respect, it being frequently injured when the tonsil is pulled up and a cutting instrument used. The posterior pillar is then limited in action, the isthmus improperly closed, and, as a result, the voice nasalized.

The superior constrictor also carries the important vessels to the tonsil. These vessels divide on the capsule before entering the gland, and an intimate knowledge of their location enables the operator to break them up in their smaller divisions by keeping on the capsule surface.

*Read at the Annual Meeting of the Minnesota State Medical Association, St. Paul, Minn., Oct. 11 and 12, 1917.

The faucial tonsils have no function, as this term is ordinarily used—one should speak of them in their relation to the process of immunity and infection. The tonsils are lymph nodes or modified lymph glands, so constituted as to be especially liable to the invasion of bacteria. All food passes between them, and impurities from the air, gases, etc., have access to them.

Bacteria and foreign substances pass through the tonsil crypts; this is definitely proven; even primary tuberculosis of the tonsil is not so rare as usually believed. This is due to the inability of the tonsil epithelium to hold the tubercle bacilli, allowing them to pass into the deeper lymph glands of the neck. The rapidity and measure of invasion is in proportion to the depth of penetration and severity of insult to the tonsil. For example, crypts that have been curetted, punctured, or interfered with surgically, offer a favorable avenue for organisms to pass through the injured and less resisting epithelium into glands beyond. Surface epithelium is tolerant and has a selective action to dust and organisms; it becomes tolerant by habitual environment. This tolerance is lost in the deep portion of the gland. The streptococcus is commonly found in the tonsil crypts of patients, both in health and disease. In most instances, in order to induce an attack of tonsillitis, auto-infection is necessary, together with a sort of molecular disturbance of the sympathetic induced by fatigue, exposure, and some systemic disorder.

The most convincing evidence we have that the tonsils are among the most important of the primary foci of systemic infection is derived from the post-operative results of tonsillectomy. Joint, heart, kidney, goiter, and glandular conditions, show such marked improvement after tonsillectomy as to leave no doubt whatever as to the source of infection. Not alone where the attention is called to tonsillar symptoms, but also when the tonsils are small and without demonstrative lesions, in these cases the clinician is often unable to say with certainty that the fault lies in the tonsils. But if cryptic retention and chronic toxemia, associated with general malaise, anemia and loss of weight, are manifest, without other definite localized lesion, the tonsils should be condemned.

The infection may be divided into two groups: that due to a chronic condition in the tonsil itself; and that reaching the tonsil from without, through the medium of water, milk, and other articles of food.

It is my opinion that the various forms of septic sore throat looked upon as different diseases, are in reality identical—merely representing degrees of virulence of the same process. During the epidemics of this disease in Boston and Albany, Drs. Smiley and Smith isolated a variety of streptococcus common in all the cases, calling it the streptococcus of Smith. The streptococcus pyogenes group is usually associated with septicemia, erysipelas, etc., while the streptococcus angiosus group is associated with endocarditis, adenitis, otitis, etc. In all the epidemics of septic sore throat occurring in Boston, Albany, Illinois and Wisconsin in the past few years, milk was the most common carrier favoring the development of the streptococcus and giving it added pathogenic power.

Since vicious organisms may pass from tonsils so readily into the lymph stream, it is not difficult to understand the present prominence given to focal infections in the causation of many internal maladies. Dr. Frank Billings, in a study of 70 cases of arthritis, found the center of infection was most frequently a streptococcus focus from the faucial tonsils. A hemolytic streptococcus was found in most of the cases.

In the Toronto Hospital for sick children it is reported from a large number of tonsillectomies that 4 per cent of the children showed albumen in the urine, and 2 per cent albumen and tube casts, which conditions cleared up after tonsillectomy. Dr. Charles Mayo reports, in reviewing several thousand operations on the thyroid gland, that the beginning of thyroid hypertrophy may be a defensive effort of the organism to resist toxic invasion.

In experiments conducted by Roseneau, the streptococcus viridans was found in the tonsils of a large percentage of his cases of endocarditis. In Roseneau's reports on poliomyelitis cases, the tonsils and naso-pharynx supposedly contain the active-producing organism for a long time after convalescence; and in cases where temperature was high and paraly-

sis progressive, improvement was noted after tonsils were removed.

In rheumatic conditions, especially of long standing, where the joints have been sensitized by a primary focus, a very slight additional infection is necessary to produce a recurrence of the joint symptoms; and when results are not satisfactory following removal of the tonsils, it may be explained by the infection having passed to the deeper lymphatics, or to the presence of some overlooked focus elsewhere.

In the majority of cases in adults where removal of tonsils is indicated, the question is usually not one of local annoyance to the patient but of systemic poisoning.

Apart from the active varieties of bacteria, many non-pathogenic ones are found; they as a rule are not active, but their toxins are positive in their production of blood changes. It is the slow, constant absorption of these toxins that is injurious. We are indebted to Billings, Roseneau, Pynchun, Ballenger, and Slueder for brilliant contributions to the store of knowledge on the tonsil question. As to the indications for the operation of tonsillectomy, whether children or adults, with but few exceptions every tonsil is better out than in, and I have no knowledge of a single instance where a patient was made worse by a properly performed tonsillectomy. If at any time of life tonsillectomy is to be criticised it is in children under 6 years of age. Until that age the tonsils exert a mechanical influence in supporting during development the complex musculature of the throat, the muscular function of which is not fully developed; and also the mechanical adaptability of children to deformity, if it should occur from the operation, is not good.

An exquisite tonsillectomy is not beneath the dignity of the most highly gifted surgeon; in fact, with so much respect does he hold the operation that he refers the work to a laryngologist to do. Following the example or inherited instinct of a few of his older confrères, the young operator of today feels perfectly confident to perform an enucleation of the tonsils as one of his first surgical triumphs. Consequently much poor work is being done. Many cases come up for re-operation two and three times. Appalling post-operative conditions are found, and as a result tonsil surgery does not

occupy the rank it deserves. Those familiar with after-results will agree with me that the operator requires a special skill and training to perform it acceptably. This is not to be wondered at, as although we have what might be called a standard operation in instrumental dissection, we are by no means agreed how it should be done. When we can agree upon a technique which completely removes the tonsil in its capsule, does not open or wound fibers or the aponeurosis of the superior constrictor muscle, does not injure the palato glossus or palato pharyngeus muscles, which conserves every bit of membrane over the tonsil, prevents fusion of the muscles named, and leaves a linear scar in a rudimentary fossa, with the movements of the tongue and the voice unimpaired, we will have achieved the ideal, in the light of present knowledge.

I will give you briefly the technic of a simple dissection operation which seems to me to fully accomplish the desired features enumerated above.

I would not have you think I regard it as better than all others, but I hope it is at least worthy of your consideration.

Besides a mouth gag, two other instruments only are used; a long dressing forceps as a dissector, and a blunt tonsil punch as a tractor or a volellum. If the operation is done with general anesthesia the patient should have the usual surgical preparation with a liberal hypodermic of morphine and atropine. The anaesthetist should be one constantly familiar with every detail of the work. The anesthesia should be deep, beyond any murmurs and resistance of the patient.

The operative technic is as follows: The protruding portion of the tonsil is grasped by the tractor at the supra-tonsillar fossa and pulled forward. At this point the anterior pillar is picked up by the forceps and stripped outward, exposing the white, smooth surface of the capsule. The point of the forceps is inserted along the outer margin, and with a firm stroke downward, the anterior pillar is separated off. Starting at the point of insertion again, the forceps is worked around the upper lobe and down the inside, separating off the posterior pillar.

The tonsils now being free, are grasped high up and as far back as possible on the upper lobe, and pulled and stripped down to the base of the tongue. The body of the tonsil is then grasped firmly in the tractor and, with the aid of the dissecting forceps, is forcibly pulled and stripped off the side of the tongue, taking with it a portion of the capsular attachment known as the lingual tag. When this operation is carefully done every portion of the tonsil is removed, with slight disturbance to the muscles; and as the dissector follows the line of the capsule, the vessels are broken up in their small divisions, with a minimum loss of blood.

Some of the advantages:

1. Its simplicity.
2. No chance of wounding the structure of the tonsil bed, as with a knife or snare wire which cannot be guided.
3. There is no stump left at the base of the tongue, as is the case when the tonsil is removed by a snare or other cutting instruments.
4. The lingual tag is removed in a manner which cannot be done by any cutting instrument. This tag contains follicles and in time will replace tonsil tissue in the base of the fossa tonsillaris.

Post-operative deformities of the palate and pillars should not occur. Contraction of the cicatrix may pull the pillars together. Careless or incompetent operating may be followed by almost any degree of deformity of palate or pillars, or of loss of the uvula.

Provided no undue injury is done to the palate or faucial arches the singing voice is not injured; on the contrary, a marked improvement results. Any injury that results in cicatricial contraction interfering with the movement of the palato pharyngeus, or any injury limiting the backward or upward movement of the palate, is injurious to the voice, nasalizing the tone. One of the functions of the palato-pharyngeus is to tilt the thyroid onto the cricoid cartilage, stretching the vocal cords. This is important in regulating the pitch of the voice.

An important factor in the comfort and well-being of the throat is a normal amount of secretion, especially in the naso-pharynx, as in the nose an over-abundant nasal space induces dryness. Likewise the pharynx suffers when

there is a lack of application of one mucous surface to the other. When, owing to adhesion or contractions of the pillars, and most particularly, destruction of the posterior pillar or pillars, the palate is drawn forward or contracted upwards on one or other side, its application to, or moistening of, the posterior walls is prevented when swallowing or phonating.

One of the functions of the soft palate and uvula is to receive the brunt of air when breathing through the mouth, and to moisten and filter it before it passes to the chest. Consequently, when the palate is drawn up by contractions, injury, or deformity, the posterior pharyngeal wall suffers and soon becomes glossy, dry, and often, cracked, producing great discomfort, and inducing an almost constant effort on the part of the patient to relieve this condition by swallowing.

(See page 27 for discussion.)

TONSILS A CAUSE OF, AND TONSILLECTOMY A CURE FOR "RHEUMATISM."*

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Mr. President and Members of the Association:

The writer has no new theories to expound. He wishes to picture some fallacies that have arisen in the minds of many of the medical profession as to the cause and the cure of rheumatism.

While it may seem presumptuous and foolhardy in this enlightened medical age to question, it is my sincere belief that the profession have gone "plumb locoed" on the tonsil question, and that they are barking up the wrong tree.

While writing this paper a hospital superintendent made this statement to me: "Almost all patients entering this hospital want their tonsils out."

I regret that one of the latest fantasies in the treatment and the prevention of rheumatism seems to have been found in "tonsillectomy," which has followed fast the rapidly disappearing vaccine fad; therefore a brief history, together with some discussions upon the

*Read at the annual meeting of the Minnesota State Medical Association, St. Paul, Minn., Oct. 11 and 12, 1917.

characteristics and nature of what we call "rheumatism," may not be amiss.

The term "rheumatism" dates back from about three centuries ago, previous to which time this malady was comprehended under the term "arthritis," and it included with all inflammations of the joints, ligaments and muscles.

Anciently, the words "Rheuma" and "Rheumatism" embraced all those diseases in which it was supposed that the blood became impregnated with acrid humors, phlegm, bile and other noxious materials.

Hippocrates states that the bile mingles with the blood in the veins and articulations, causing swelling of the joints, and may extend to the whole body, producing acute pains.

This view was followed by later writers with some modifications, in which disease of the mucous membranes was divided into separate groups under the general head of catarrhs.

In 1610, William de Balliou published his thesis on rheumatism in which he showed the distinction between this disease and gout.

Sydenham fifty years later divided these two diseases even more distinctly. In earlier times, after the separation of rheumatism from gout, the terms "Rheuma" and "Rheumatism" were applied to maladies which affected the exterior of the body; but many ailments wholly dissimilar as, for example, phlebitis, pyemia, neuralgia, coxalgia, certain scorbutic and scrofulous diseases, and some puerperal conditions, were included. Thus all diseases characterized by pain and supposed to be due to cold were called rheumatism, so that the brain, the lungs, the heart and the kidneys, etc., were all supposed to be the seat of rheumatism, and the morbid changes that are now recognized in these organs as a result of rheumatism, and many others, were ascribed to this poison. In spite of the fact that the acute and chronic forms of articular and muscular rheumatism were pathologically dissimilar, they were, nevertheless, joined together under the one common symptom, pain; and it is no wonder that the term as handed down to us has a vague significance. It has been shown that it is impossible to regard all diseases classed as rheumatism as identical, either in causation or pathology, and it would seem best that each should be

designated by its own pathological signification; but, alas! even the German attempt resulted in failure, and our own met with no better success.

While the definition of rheumatism does not add much to our knowledge, it has been referred to as a constitutional disease attended by a febrile disturbance of structure and around joints, and often other organs of the body, especially those of connective tissue groups.¹

When our latest and best known writers assert that the etiology of rheumatism is still unknown,² but believe it to be caused by an infectious specific micro-organism, while some believe it to be non-specific, and still others, despite the findings of our bacteriologists, believe it to be a disease of metabolism, and that bacterial infection does not explain the phenomena, may we not be pardoned for asserting our belief that the disease is one of the latter, and that pyogenic bacteria have nothing to do with it?

These non-pyogenic advocates base their contention on the **fact** that no other disease presents such absolute pathognomonic symptoms as does rheumatic fever, and assert that every disease in its most pronounced typical form has one unequivocal, absolute diagnostic, pathognomonic symptom; that the profuse, drenching, sour smelling, acid perspiration, normally alkaline saliva and feces acid, urine hyper-acid, is a conjuncture of acid phenomena, which is pathognomonic of rheumatic fever. Its subjugation by a vegetable product from nature liberating a base in the blood, the powerlessness of every other known treatment, and the uselessness of this remedy in any other morbid state, constitute positive chemical proof that the poison of rheumatism is acid.⁴

Such symptoms are not produced by any known bacterial or other disease, and the further proof is that no pus is ever found in joints affected by rheumatic fever, and that all such joints attacked by rheumatism recover perfectly when the disease is cured.

I wish also to state what I believe to be another fact in this connection, and that is that there is no such thing as rheumatic iritis and will venture the assertion—which is contrary

to the general belief—that rheumatism is never a cause of iritis.

Iritis is never present during the course of the disease, nor does it follow convalescence, as is often the case from bacterial invasion and the diseases produced thereby.⁷ That septicæmia, or lung abscesses or any other complications such as follow pyogenic bacterial infections are ever present or follow attacks of rheumatism, or lung abscesses, or any other complication as a result or sequela, and that these are easily explained by the increased blood pressure, the result of increased mechanical attrition on the valves, which causes a vast formation of new cells immediately organizing into connective tissue, seems evident.

Further still, these advocates claim that statistics show, that since the advent of tonsillectomy to prevent or cure rheumatism, that the death rates from rheumatism and heart disease have enormously increased.

That some of the forms of **so-called** rheumatism may be caused by pyogenic bacterial infection, there may be little doubt, for instance, gonorrhoeal rheumatism which is no rheumatism at all. Certain joint diseases which result disastrously to their cartilages may possibly be of bacterial origin, but I have grave doubts as to their ever being the exciting cause of rheumatism *per se*.

None of these have any counterpart with rheumatic fever except in the symptoms of pain and fever. This is true, I believe, in all joint affections which come under a specific nomenclature, and therefore the term "**rheumatism**" which covers so many varieties should be made specific. So-called rheumatic arthritis, or rheumatic arthritis deformans which attacks the joints themselves and produce deformity and disability have no business to be called rheumatism, or even rheumatic.

Such is not the outcome of rheumatic fever which, when it disappears, leaves no trace of having existed in the joints themselves.

This germ theory has taken a firm hold on the profession and it will be hard to shake it off. It has been instilled so firmly into the minds of the profession by our bacteriologists, and into the minds of the public through the reading of newspaper articles that the tonsils

are a menace to health and have no right to exist, that one who doubts is now considered a fogey.

The King-Connellan bacillus discovered in the throats and around diseased teeth, when cultivated and introduced into animals has seemingly produced joint lesions, but experimenters have as yet been unable to discover these bacilli in such diseased joints; and it was also found that where these bacilli were found in the throats of patients suffering with joint lesions that when the tonsils were removed, the patients rapidly grew worse.

The "*Diplococcus Rheumaticus*" was discovered some years ago in the blood of rheumatic patients and first gave the clue to the possibility of its being the active agent producing rheumatism.

We hear little of this organism now, but it is the streptococcus that is being boomed since they have been discovered to reside in the crypts of the tonsils, and that tonsillitis has **sometimes** preceded attacks of so-called rheumatism.

Is it not possible, I would ask, that tonsillitis may be one of the manifestations of a rheumatic diathesis and that it is a precursor of what is going on in the system by false metabolism? Why are not all cases of tonsillitis followed by rheumatism? "A tonsillitis, in the majority of instances, is not a local disease, but merely an expression of a systemic condition; for all we know the tonsillitis may be an expression of nature's method of combating an untoward systemic condition, and to remove the tonsil may be like killing the goose that lays the golden egg. A mere tonsillitis, therefore, or even recurring attacks of tonsillitis, may not be, and are not an absolute indication for the removal of the tonsils, and to regard it as such would be something like advising the removal of the entire pharyngeal walls to insure against a recurrent pharyngitis."⁷

So said Dr. G. Hudson-Makuen before the Philadelphia Laryngological Society in January, 1916.⁸ In his concluding remarks he also said: "In its normal state the tonsil is not a menace, but a probable protection, and its presence is helpful in both phonation and articulation. It is my earnest conviction that the fau-

cial tonsil rarely becomes a focus for serious general infection."

Rheumatic fever used to be treated by the alkaline method with fairly good results, and in preventing heart lesions more recently salicylic acid has been the physician's standby, but apparently it gave place to vaccine treatment by some, and later by the removal of the tonsils; whether diseased or not makes little difference.

"Cases, however, who after having tonsils and teeth removed, then treated for months with vaccines without benefit, are reported eventually cured by anti-rheumatic diet. Cases of acute rheumatism subsequently attack by typhoid fever, when placed on a milk diet and the fever has subsided, have found themselves free from their rheumatism," says a noted author and teacher,⁴ "and when they have resumed their former diet they have again contracted rheumatism." What are the logical conclusions which follow such experiences? Can bacterial infection explain? I think not.

The writer suffered from rheumatic attacks at intervals for years during which time he had neither tonsils or teeth. The studies of Swift and Kensella to determine whether any constant cultural or immunological type of bacterium was associated with acute rheumatic fever was carried out in eighty-five blood cultures on fifty-eight patients with only seven positive results. In all joint exudates the cultures were sterile. Similar non-hemolytic streptococci were recovered from endocardial lesions in only one-half of the fatal cases of acute rheumatic fever. **They** therefore do not feel that the etiological relationship has been proved.

Comparatively recent reports in the Johns Hopkins Bulletin state that in one thousand cases of tonsillectomies analyzed, there were nine who had rheumatic arthritis, and only two were improved, two unimproved and five were made worse.

There were twenty-five who suffered from rheumatic fever, and four of these had recurrence before leaving the hospital. I found no mention of the other twenty.

Cases of chorea, the origin of which we have been lately taught is due to the diplococcus rheumaticus floating in the blood and lymph stream were twenty-four, and the results of ton-

sillectomy were far from pleasing. Two of these cases died with chorea the year after operation, in one the symptoms were still present after three years, and one was worse than at the time of the operation; one of the cases operated on had no symptoms at the time of operation has had two attacks since.

Of twenty-three cases of Sydenham's chorea in which tonsillectomy and adenectomy was done, eight have had recurrences, and the authors consider it a dangerous operation to perform during the acute stage.⁵

Dr. A. J. Gillette of St. Paul, in a paper read before the Southern Minnesota Medical Society some years ago, exploded the idea of sciatic rheumatism. He then asserted that he had never seen a case of so-called sciatica in which he was not able to find some local cause which, when it was removed, the trouble ceased. He said that a partial dislocation of the iliosacral joint had been demonstrated to be the cause in a number of instances. Pressure on the nerve from pelvic growths he found were not uncommon local causes.

What would removal of the tonsils in such cases avail may I ask, and how would bacterial infection explain sciatica?

Is it to our discredit that so many are sent to mud baths and water cure establishments to rid themselves of so-called rheumatism? What good can these establishments do in cases of bacterial infection other than to stimulate organs of excretion and place the system in a better condition to withstand and antagonize the poisons? Would you expect material benefit from such treatment in a case of septicemia, in tuberculosis, in syphilis, in pneumonia, in gall-bladder infection, in peritonsil abscess or in guinea, or any of the sinus infections, or in fact any other bacterial disease? Would they be of benefit in poliomyelitis? If rheumatism is a bacterial disease then why are so many benefitted by these baths? These baths stimulate into activity sluggish and inactive eliminating organs of the body and stagnant refuse matter is thereby washed out of the system; but the patient is immediately placed on a **non-rheumatic diet** which changes the abnormal chemical metabolism, and nature does the rest. The patient improves and in a short time is cured be-

cause the cause of his rheumatism is thereby removed. It is my belief that if we are to treat these cases successfully we shall have to abandon our beautiful bacterial theory, and avail ourselves of other means at hand which will wash out the sewers of the body, and administer such remedies as will change the secretions from an acid to a non-acid, and prescribe such diet as will supply and maintain a proper and healthy metabolism.

"Accelerated protein metabolism produces an excess of acids over salts; with every loss of balance between supply and demand of salts, one of the numerous minor forms of rheumatism appears. Vegetables are 23 per cent. salts, cereals, potatoes, bread, green vegetables, debar child rheumatism," says a noted child specialist and dietitian. "Broths and sweets in children, sweets and alcohol in adults are dominant causes of rheumatism," says the same author.⁴

Nature's salicylic acid is said to be a three-fourths cure for an attack of rheumatism, but to complete the cure or the other fourth we must resort to non-acid producing foods which are the remaining antidote. The former will remove the disease from the fluids, but it requires the latter to change those in the tissues themselves.

With all due honor, respect and admiration for our eminent bacteriologists and their painstaking and conscientious work, when they advise removal of the tonsils asserting that infection therefrom causes rheumatism, I for one believe them to be in error. Joint lesions, appendicitis, inflammation of the gall bladder, tuberculosis, poliomyelitis, and many other diseases may have their source in bacterial infection, but as a cause of rheumatism they have not a single pedestal to stand on for support.

Diseased tonsils that cannot be cured should be removed, tonsillectomy for prevention or as a cure for rheumatism is a delusion and a snare.

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DISCUSSION.

DR. FRANK E. BURCH, St. Paul: I have listened with a great deal of interest to these papers, especially that of Dr. James. I believe he is partially right but mostly wrong. There is no doubt there is developing a wave of conservatism about tonsils, but tonsillectomy has come to stay as a fixed operation (it is today the most commonly performed operation in most of our hospitals), just as appendectomy and cholecystectomy have become established procedures.

For my own part I feel that the wholesale massacre of the tonsil, especially of the juvenile tonsil, is already a thing of the past.

The reason for this was that there had been a decided lack of discrimination in deciding what types of tonsils require removal and what types are harmless. Some of this has come about because of the tendency of school nurses and school physicians to recommend removal of practically all hypertrophied tonsils in children. I see a great many tonsils recommended for removal by physicians, school nurses, and by parents themselves, that do not require removal.

The tonsil operation is not without its dangers. The danger from infection following tonsillectomy is slight and I have seen only a few cases of severe infection, these occurring in association with decayed teeth or pyorrhea. The danger from hemorrhage, however, is not a thing to be passed over too lightly. I can recall three deaths from hemorrhage in this city. I have my share of hemorrhage following tonsillectomy and am becoming more concerned about the question of bleeding following every operation I do. The time to control the hemorrhage after tonsillectomy is before the patient leaves the operating room. It has become my custom as a precautionary measure in cases where the tonsil beds are very large to pass a No. 1 catgut ligature through both pillars and to bring them in apposition, without tension. This suture slips out within a few days, and this method is followed by less hemorrhage than when the wound is left open, and it hastens healing very materially. As to when to do the operation, or how to do it, each one learns by personal experience the methods best adapted to himself which give him the most satisfactory results.

Tonsils that are prominent or not too adherent I do not hesitate to remove by the Sluder method, and I have found that a dull blade and slow work are followed by comparatively little hemorrhage. However I usually use the snare after dissecting the mucous membrane thoroughly off the tonsil, separating it from the anterior and posterior pillars and the supratonsillar fossa, then using blunt dissection. This method I have come to adopt as a routine procedure where local anesthesia is employed. As to what type of tonsil should be removed in children, there is no doubt that tonsils which are hypertrophied and are sufficiently large to act as mechanical obstructions to swallowing, breathing or speaking, should be removed. Perhaps we are not doing a prophylactic

thing in every case, but in some of them we know we are, because we see less serious trouble with throat infection in those cases which have been operated upon when infectious diseases are epidemic. Naturally those children who are subject to recurrent attacks of inflammation are most benefitted by our efforts.

Tonsils which are chronically inflamed, filled with cheesy matter, which have a chronically injected, deep purplish-red appearance, and which are imbedded and cannot drain themselves, require removal and the patient is almost always benefitted by their absence rather than by their presence. Cases with chronic catarrhal otitis from involvement of the Eustachian tube, where the drainage is imperfect, with suppurations of the ear persistently recurring, are in the great majority of cases greatly benefitted by the removal of the tonsils together with the adenoids.

Removal of the adenoids alone, leaving the tonsils, is frequently insufficient to relieve the ear symptoms, and these patients return after a year or two for further relief, and the parents invariably question the previous procedure, if they have had anything to say about it.

There is a fourth class of cases, namely, children with asthma, enuresis, the so-called reflex neuroses, which is sometimes benefitted by tonsillectomy. I can testify to this from a considerable experience with cases in which the general tone of the child has been markedly improved by tonsillectomy, and the enuresis especially has been relieved. I have seen two cases diagnosed as *petit mal* very much improved by tonsillectomy.

When it comes to the great problem of systemic infections and the cases of infectious arthritis, neuritis, and heart lesions, we need to discriminate and we need the aid of the internist and the family physician in determining whether or not the tonsil is an actual factor in causing the conditions for the relief of which these patients are referred. Sometimes we cannot discriminate. If the patient is suffering from a serious condition, I have little hesitancy, providing it involves no unusual operative risk, in recommending tonsillectomy with the hope, rather than with the promise, that it will relieve the secondary condition; at the same time I also advise these patients to seek further for the cause of infection in the teeth, the sinuses, the prostate, a salpingitis, cholecystitis or an appendicitis. Many of these patients have other foci of infection, which from our narrower view, we are apt to overlook. In such cases I think consultation with the patient's physician is the thing we need. I have never seen any benefit from tonsillectomy in chronic rheumatoid arthritis. I have operated upon a good many such cases, more in previous years than recently, and can truthfully say I have never seen one single case of chronic rheumatoid arthritis benefitted in any way by the removal of the tonsils. The type of tonsil that should not be operated upon is that in which the tonsils never become acutely inflamed, the

patient being in perfect health, even though the tonsils are enlarged or contain secretions in the crypts. We should never operate upon tonsils during the acute stage of tonsillitis or during the febrile stage of arthritis or in very acute chorea. Patients with extremely high blood pressure are occasionally referred for tonsillectomy. They involve great risk. I have in mind, for example, cases in which the systolic pressure is 225. Diabetics are extremely bad subjects, as are also cases with enlarged cervical glands with active chronic pulmonary tuberculosis. Again referring to the technic of tonsillectomy, I think it is fairly well established that the main criticism in connection with the removal of the tonsils is the injury to the posterior pillar. I have seen many tonsils removed by blunt dissection in which the pillars have been very seriously damaged. This occurs less frequently following the Sluder method. Some of these patients develop troublesome adhesions, nasal voice, ear symptoms or a chronic laryngitis. I would like to sound a word of warning about adenectomy. I am convinced that we are going to discontinue the scraping operation for adenoids and personally I am exercising more care in cutting adenoids out with the adenotome and then using my gauze covered finger. Every little while I see a case where damage is done to the hearing of patients who have been operated upon primarily on account of their ears and who are actually made worse by faulty adenectomy. The adhesion between the posterior pillar and pharyngeal wall, and the resulting improper drainage of the Eustachian tubes are possibilities we have been overlooking.

DR. CHARLES N. SPRATT (Minneapolis): As to the part of Dr. Patterson's paper which I heard, I think it is the consensus of opinion that we are in perfect agreement with it. What he has outlined is standard practice with practically all of us.

Dr. James brings up several interesting factors in his paper and, like Banko's ghost, the tonsil question is ever before us, and it is still unsettled. I think we must agree with Hippocrates, who has said "experience is difficult and judgment fallacious." Possibly Dr. James is right in the main; possibly he is not.

I divide my tonsil cases into two classes, those in which I make a diagnosis at the office from the appearance of the tonsil, and those in which I make the diagnosis over the telephone or from what the patient tells me. The first variety is the large hypertrophied tonsil, diseased or not. Such tonsils ought to be removed on purely mechanical grounds. In the second variety, one makes the diagnosis from the history, namely: repeated attacks of tonsillitis or of rheumatism. I believe that in any person who has had two or more attacks of tonsillitis, the tonsil should be removed. I realize, of course, this is a very general statement. I also realize that arthritis deformans will not be benefitted by the removal of tonsils. I have yet to see a patient of my own who has given a history of tonsillitis who has not been benefitted by the removal of his tonsils. Possibly,

some have not been benefited that I have not seen since the operation.

As Dr. Burch has mentioned, we often see injury to the pillars. I know that all of us who are honest have destroyed the posterior pillars and other parts of the throat when we should not have done so. Many people who have good singing voices hesitate very much when the question comes up of having their tonsils removed on account of the possible change in their voices, and I do not blame them as frequently, the scarring following the removal of tonsils stiffens the throat and may materially interfere with the use of the voice. In 1903, when I was house officer at the New York Eye and Ear Infirmary, I was impressed at the apparent unsurgical methods used in the removal of tonsils, as free hemorrhage cannot be considered good surgery.

In 1903, I devised a snare with a ring, through which the tonsil was forced, and a concealed wire loop was used to cut the base of the tonsil. This instrument was described in *American Medicine*, April, 1903. (I could never get my instrument to work to my own satisfaction.) The same principle has been used in the past few years in the Beck snare. I feel that we should try to remove tonsils with a minimum amount of hemorrhage especially since one member of my own family had a severe post-operative hemorrhage after a nice blunt dissection. I may say that I have tried practically every method from the old finger enucleation to the various sharp and blunt tonsillotomes and the Sluder method. To my mind the last method is by far the best one that has been devised, were it not for the bleeding.

For the past year I have been experimenting and trying to devise a sort of angiotribe. This same problem has been in the minds of many others. Dr. La Force has devised an instrument developing the same thing, but unfortunately he has done the unprofessional thing of patenting it. In my instrument, I have taken the Sluder tonsillotome and had a blunt blade placed in the groove in addition to the sharp blade. This blunt crushing portion is about one and one-half mm. ($1\frac{1}{2}$ mm.) thick. The tonsil is forced through the opening in the instrument. The blunt blade is then forced home, and by means of a screw an immense amount of pressure is applied to the base of a tonsil. After from four to five minutes this blade is loosened and the sharp cutting blade is pushed home, and the tonsil is cut beyond the crushing portion (just as in removing an appendix the base is first crushed and then the appendix is cut off with a sharp knife). I can do a tonsillotomy much cleaner than I can with the blunt dissection and with practically no bleeding, especially if the instrument is left on four or five minutes.

This morning I had a secondary hemorrhage in a little girl on whom I had operated on one week ago yesterday. The right tonsil was removed clean with the crushing tonsillotome. The left tonsil was not completely removed with the instrument, and the scissors were used to remove the lower portion. The

hemorrhage occurred from the left tonsil, that is, the one removed by scissors.

Another point the doctor brought up is that it is an absolutely wrong surgical principle to scrape or hoe an adenoid out. Twenty-five years ago the late Dr. C. J. Spratt purchased a Gradle adenotome. He never was able to use this instrument with any satisfaction. At first, I did not find it very satisfactory on account of the difficulty of introducing it in the post-nasal space. I now, however, use this old Gradle adenotome in practically all adenoid cases, as it removes the mass in one sweep of the knife, leaving a clean base. Many modifications have been made of this instrument, but in my hands the original is the best one yet devised. The bleeding from the adenoid with this sharp knife is five to ten times as much as what one gets from the two tonsils when they are crushed with the tonsillotome. If one would do as Beck of Chicago has suggested, apply a piece of gauze in the post-nasal space after adenoidectomy, there would probably be much less hemorrhage from the adenoid.

DR. NORVEN H. GILLESPIE, Duluth (closing the discussion on his part): I am pleased indeed to have heard such a splendid discussion on this subject. It is one in which we are all vitally interested.

Nearly every instrument for the removal of tonsils in a mechanical way has done harm. There has been a great deal of harm done by the Sluder instrument, although it impresses the amateur as a convenient method of removing the tonsil. It belittles the operation. It puts into his hands an instrument which is of value only to its inventor and much harm results.

A great deal of discussion has taken place from time to time regarding the removal of tonsils for rheumatoid arthritis. The point I wish to make is this: a great many of these cases have not been benefited, and invariably a portion of the tonsil has been left, and that emphasizes a part of my paper, that any interference with the tonsil whatever that does not remove it is an injury because the tonsil crypt becomes more active. You increase the possibility of focal infection by interference with the tonsil in any way whatever.

Lastly, with regard to this great bugaboo of post-operative hemorrhage of the tonsil. I am truthful when I tell you I have not had a large experience in this work; I have been practicing 21 years to be exact, and I have not yet had a serious case of tonsillar hemorrhage, and particularly since I began to remove tonsils with the two simple instruments I have shown. I can go home and rest perfectly after such an operation, being assured that I will have little trouble. I could not say that when I removed tonsils with any sort of mechanical instrument.

Another point which I wish to make is that in removing the tonsil with any instrument the tonsil cannot all be taken out. The point I made in my paper was that the lingual half, or that portion of the tonsil attached to the margin of the tongue, cannot be removed with any cutting instrument; it cannot be removed with the shears. The tonsil is continuous up

under the base of the tongue, and if you put in a snare, or a Sluder, or any other instrument, you cut the tonsil out before the tonsil tag is removed, which can only be done about the dome of the tonsil and tag.

Another point in the control of the hemorrhage is anesthesia. When I attended the Congress of Surgeons in London I had the pleasure of listening to Mr. Lane. He told the surgeons present this and that, and I came back with the conclusion that whatever a doctor said we ought to do, was invariably wrong. That has been my experience relative to anesthesia. The text books tell us that we must put the patients deeply asleep; that if we get blood in his lungs we will get gangrene of the lungs or other trouble. I would like to ask you which patient is likely to get blood in the lungs, the patient fighting you at the time of operation, or the patient who is quietly asleep? Furthermore, what sort of an operation on a complex muscular throat can you do if that patient is gagging or yelling out? Hemorrhage is greater because he is struggling. He must be thoroughly asleep. You must have a competent anesthetist when you operate on these cases. If the patient is profoundly asleep you do not get as much hemorrhage as you would if the patient is only partially or quietly asleep, and it is easier to pick up a vessel and clamp it when there is bleeding.

DR. J. H. JAMES (Mankato), closing the discussion: I do not want you to understand that I have reference to any rheumatic condition other than inflammatory rheumatism, which I assert is an acid condition of the system. All the secretions and excretions are acid, and you do not get that condition in any pathogenic bacterial infection. If rheumatism, as I described it, is a bacterial infection, it is not necessarily due to pathogenic bacteria. The other point is that tonsillectomists lose sight of the factor that patients on a rheumatic diet have not rheumatism until they stay off of that diet. When they return to a certain diet they will have rheumatism. If bacterial infection causes that form of rheumatism, why don't these patients have it in the interval?

DR. H. A. BEAUDOUX, St. Paul: I wish to congratulate Dr. Spratt on his instrument. I think it is a good one, and it is a great improvement on the Sluder instrument, as it does away with a great deal of bleeding that no other instrument, except the La Force instrument, can possibly control, and can be used in about 90 per cent of the cases.

In regard to tonsillectomy, there are two kinds of tonsils, one kind should be taken out, and the other which should not be taken out. The tonsil that should be taken out is one that is demonstrably or suspectedly diseased, and can be easily dissected by any instrument you may wish to use—the Sluder, Ballenger, Beck, or any other instrument, remembering that a tonsillectomy is not a pharyngotomy nor pharyngeotomy. That settles it so far as the operation and I are concerned.

The kind of tonsil that should not be removed is the tonsil that one cannot take hold of and move

freely under the anterior pillar. That is the sclerotic tonsil, with capsule, fascia and the adjacent muscles merged together into a cicatricial whole. When such a tonsil is removed by dissection, one cannot help but get some cicatricial contraction and do harm. It should be bitten with an appropriate rongeur and the soft tissues of the tonsil removed down to the capsule, but the capsule itself should be left intact, because if you attempt to remove it, you will remove a part of the fascia and adjoining muscular tissue, and subsequently deformity will take place. If there is any change in the voice brought about through this operation, it will be in those cases. This kind of tonsil is better left untouched unless the patient suffers from periodical inflammation and infection. I have taken out a great many tonsils, but with no injury to the voice as yet, as far as I know.

In regard to hemorrhages, apparently our results are at variance. I have had bleeding after the first few hours following the operation, some of these being due to overlooking a bleeding vessel in the operating room, others caused by repeated vomiting. Vomiting is the cause of recurrent hemorrhages in a large per cent of the cases. I have had no deaths, and only 11 such hemorrhages.

In regard to the second paper, I want to congratulate the essayist on bringing up the subject of focal infection. We all know about it, but I feel many of us do not bear it in mind all the time. We bear it in mind as far as one or two things are concerned and then let the others go undiagnosed. Focal infection not only exists in the tonsils or in the sinuses or in the ear, post-nasal space or pharynx, but it exists in other places, such as the prostate gland, the genito-urinary tract of the male and female, and probably much more frequently than we have heretofore supposed in the intestinal tract, which is the hardest tract to get at to form a correct conception of it and make an accurate diagnosis and successfully treat it.

In regard to Dr. James' paper, I cannot agree with him. He has already told you that someone handed him a series of lectures. I am the guilty party. Billings gave a series of four lectures on focal infections in the University of California in 1916, and after reading them I do not see how anyone can take the position that Dr. James does. Either Billings and other men who have written on the subject are wrong, or Dr. James is right. Clinical experience does not substantiate his position. Bacteriological research certainly contradicts it emphatically.

He speaks of rheumatism as a disease. Rheumatism is only a symptom. There is no such thing as rheumatism as a disease. One may have germs in the nose and throat which have passed down to the alimentary tract, or through the blood stream, and produce appendicitis, ulcers of the stomach, gall-bladder infection, etc. Removal of the tonsils in such a patient may improve the condition of the patient, but if the focus of infection is not removed the symptoms of rheumatism will go on. Until you remove

the appendix he will not be cured of his rheumatism. If a patient suffers from some other infection, he will keep on having his attacks. Acute rheumatic fever is a disease of the young, and I am prone to say that most of it lies in focal infection due to hidden foci. In rheumatism which occurs in people of middle age or who are past middle age, the focus of infection is more likely to be in the thoracic region or abdominal cavity than in the head. There may be bronchial trouble, bronchiectasis, inflammation of the prostate with or without previous gonorrheal infection, or the focus of infection may be in the intestinal tract. Some of you may remember the researches of Elliott. In one of the November numbers of the Medical Record for 1916, he has a comprehensive article, and another article in 1911 on the differentiation of arthritis deformans. He divides arthritic conditions into two classes, the proliferating and the ankylotic, and, with those, others with enlarged joints without the sheaths and tendons being involved. Extensive experiments were carried on in many of these cases; cultures were made of the bacteria found, and when injected into animals produced the same conditions. And so it is with Rosenow's work, with the work of Payne and Poynton, and so forth.

We have known of focal infection for hundreds of years, but a culmination of this question came with the work of Pasteur and Lister; Pasteur, establishing the theory of focal infection, and Lister following him by his demonstrations.

Focal infection starts from the roots of the hair to the toes, and unless we are keen enough to make our diagnosis as to where focal infection takes place we will fail in curing the rheumatism.

Salicylic acid is a specific for rheumatic fever. Billings says in his book, we have known it from practice, but that it is only palliative, it is not a cure. One may develop an antitoxin from cultures taken from the sinuses, the tonsils, or the gall bladder, and do good with it for the time being, as soon as reaction has taken place and immunity is established. The minute immunity passes off, the selective arthritis returns according to the pathogenicity of the strain, and you have pain recurring in the shoulder or knee joint, etc., as before.

So far as the removal of tonsils being a cure for rheumatism, it is such only in cases where the infection is solely in these tissues, and personally I have not the least doubt about that. With our present knowledge, gotten from men who are working independently of each other in their different laboratories—Muller in Germany, Rosenow in Chicago and Rochester, Payne and Poynton in England, and so on—all arriving at the same conclusion, there must be some truth in it. There must be some other evidence besides that furnished to fortify the position Dr. James takes, as it is contrary to the position which these men have taken through their painstaking studies and the positive results of their experiments, as well as our clinical experience.

As far as the tonsil and rheumatic symptoms are concerned, if you have a case of rheumatism preceded by an attack of tonsillitis, you may be almost certain that the infection is from the tonsil, but if that patient has rheumatism without tonsillitis, or without ever having had tonsillitis, there is no use in removing the tonsil, because the focus of infection is probably somewhere else, and the tonsil should be last to be dealt with. I have personally guarded my own reputation by saying to the patient who has had rheumatism, "you are undoubtedly getting an infection from your tonsils, and while you are not having any rheumatic symptoms now, if I take your tonsils out you will perhaps have a recurrence of the rheumatism immediately after the tonsillectomy, as it does take place almost invariably in my experience." Shortly afterwards, or before leaving the hospital, rheumatic symptoms develop sometimes very severely.

Another proof of rheumatism being a bacterial infection is that we know the streptococcus rheumaticus grows in low temperature. You all know that when a man is exposed to cold or inclement weather, he is much more likely to have an attack of rheumatism. That goes hand in hand. The body temperature being lowered and the individual resistance less, the lowered temperature favors the growth of that particular germ, and you have the whole cycle at hand to explain how and why a man who is exposed to wet and the inclemencies of the weather should have an attack of rheumatism under such circumstances.

The papers we have listened to are timely. I do not think we can talk too much about these things. We should bear in mind, however, that one organ alone or one sinus should not be held responsible for an attack of rheumatism, if rheumatism is the symptom we are dealing with, without demonstrating the source of a possible toxemia from some other organ or tract.

DR. WILLIAM R. MURRAY, Minneapolis: I have listened to these papers with a great deal of interest. There are several points that occur to me, which have been emphasized by the speakers, and there are a few of them to which I wish to refer.

I think we all agree with everything that Dr. Patterson has said. There are only one or two points that might be emphasized, and one is the great importance of deviated septum in the causation of sinusitis and interference with the drainage and ventilation of the sinuses. I believe that deviated septum is the most frequent abnormal condition we come in contact with within the nostrils, and since the results obtained from the operative work on deviated septum are satisfactory, it seems to me that the operation should be quite generally performed.

Dr. Patterson spoke of sacrificing in some cases the middle turbinate bone. I would emphasize the point that we should be very careful and cautious about removing the middle turbinate bone, because there is no doubt that the removal of a portion of the

middle turbinate is frequently the cause of sinusitis, and yet the anterior portion of the turbinate is frequently removed for the purpose of relieving sinusitis. But we should bear in mind that we should not sacrifice the anterior ends of the middle turbinated bones unless there are clear indications for doing so.

With regard to the operative treatment on the maxillary sinus, Dr. Patterson has referred to the different methods of operating on the maxillary antrum, and it resolves itself into the indications in the particular case, depending upon the amount of chronicity within the maxillary sinus, and that means from simply washing out the sinus and establishing free drainage to the most radical operative work on the sinus. My experience has been that where a radical operation upon the maxillary sinus is indicated, it is better for us to proceed at once to the radical method of operating, and that I think is preferably the Denker operation rather than the Canfield operation, although the latter operation is ingenious and gives good results in many cases.

The term rheumatic iritis is a misnomer and should not be used in connection with any form of iritis. However, that does not mean that iritis may not be due to the same infective focus or to some cause which may be present and causing some form of myalgia or some form of arthritis. It is an infective iritis and may be due, and very often is due, to infected tonsils and to infected teeth.

In regard to the etiological relationship between the tonsils, chorea, sciatica and so-called rheumatism, I do not intend to discuss that subject particularly except to say that I listened to Dr. James' paper with a good deal of interest, and yet I am still of the opinion that there is considerable connection and relationship between the tonsils and myalgia and arthritis, and I would also include chorea. I know I have relieved some cases of sciatica by removal of the tonsils.

In regard to the tonsils and involvement of the ear, the tonsils are frequently the cause of ear involvement, and yet I think we have all had the experience that after the removal of the tonsils in some cases the deafness has been increased. That has occurred, but in these cases I think it is largely a question of proper diagnosis of the ear lesion as to whether removal of the tonsils is going to be of any benefit to the ear involvement, and in those cases where it is indicated the results may be extremely beneficial.

Just a word or two in regard to hemorrhage after tonsillectomy. I think that most of us who do tonsillectomies dread the possibility of a hemorrhage. I think we should all realize that there is probably always a possibility of hemorrhage after any tonsillectomy. However, I think a great deal depends upon the method of operating, and a great deal depends upon the method of stopping the bleeding which occurs at the time of operation, and I am very strongly in favor of immediately grasping any bleeding point which appears in the course of a tonsillectomy or following it, and assuring myself that there is not going

to be any further bleeding from that source. In that way I get very few cases of hemorrhage following tonsillectomies, particularly tonsillectomies done under general anesthesia. I believe there is no question that hemorrhages follow local anesthesia more frequently than general anesthesia. When you have a patient under general anesthesia, the conditions are favorable for bleeding at the time you operate, and if you have bleeding you can ligate the vessels and assure yourself that the bleeding has stopped, and the probabilities are that there will not be any more bleeding. This is not so in cases of local anesthesia because there is more or less ischemia at the time and you may get the bleeding after relaxation of the vessels. Personally, I have had some hemorrhages, not any bad ones fortunately, after local anesthesia, but I do not recall a single hemorrhage that has occurred in my experience within the last three years following tonsillectomy under general anesthesia.

The method of operating for removal of the tonsils I believe is one of individual preference, and it makes no particular difference how the operator removes the tonsils, what method of procedure he follows, he will develop his own method anyhow. We all have our particular method and the man who can remove tonsils properly without injury to the surrounding structures is doing it in the proper way, I do not care how he does it, provided he removes all of the tonsillar tissue. The method of doing it is very immaterial.

DR. J. D. LEWIS, Minneapolis: I am pleased to avail myself of the opportunity to discuss these excellent papers. It is my belief that tonsillectomies, as usually performed, are complete only in 25 per cent of the cases. I do not believe that by any blunt or sharp dissection method, one is always able to escape rupture of the capsule, and, therefore, to remove the tonsil completely. Few surgeons will claim that a tonsil can be completely removed, i. e., histologically removed. Many surgeons frequently visit the various clinics in this and other countries for the purpose of improving their technic for other operations in general surgery, yet seem to have little regard for the importance of the operation of tonsillectomy. Why should a laryngologist advise a general surgeon to continue a method for tonsillectomy if there is a better one? Such advice applied to other operations—appendectomy or any other operation the general surgeon does—would be just as sound. Few of the general surgeons doing tonsillectomy keep up with the newer technic of this operation as they do in other operations.

As to the LaForce instrument, referred to by Dr. Spratt, I have been using it for several months. The technic is similar to that employed in the Sluder operation. The tonsil is lifted out of its bed and forced through the fenestra of the instrument; the base of the tonsil is crushed by the blunt surface; the instrument is left on five minutes, then the knife is screwed home, severing the tonsil at its distal end. This method removes the tonsil in its capsule in children in 100 per cent of the cases, and you do not have

a drop of blood. The Sluder method is followed frequently by a sharp hemorrhage, and I believe in many instances, a crescent-shape piece of tissue is removed from the anterior pillar. One cannot always escape the anterior pillar. Tonsillectomy performed with the Sluder instrument leaves a broader fossa than that by the LaForce hemostat tonsillotome. Some of the members have seen the LaForce instrument used at the Minneapolis City Hospital, and I have yet to find one who was not greatly impressed with the method.

As regards sewing the pillars to control tonsillar hemorrhage, I have never been obliged to resort to this. It is not surgically sound, any more than it is to sew the abdominal wall over a bleeding surface beneath. If the bleeding point is deeply crushed, the muscular tissue is thereby included with the bleeding vessel, and this will control even the worst forms of tonsillar hemorrhage I have seen.

With reference to Dr. Patterson's statement concerning vaccine treatment, we have used vaccine treatment in some 60 cases in our clinic at the Minneapolis City Hospital, and the only result we obtained from any vaccine was in cases of staphylococcus infection. All others were failures.

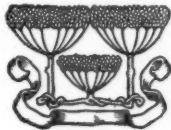
Just a word concerning the maxillary operation. I agree with Dr. Murray. If the pathology is extensive you cannot hope to cure the patient by mere puncture and irrigation. The ideal of operation, while it is considered quite radical, is that of open-

ing the canine fossa, visualizing the pathology in the maxillary sinus and removing it completely, making a large opening beneath the inferior turbinate (leaving the turbinal intact) so as to provide for adequate ventilation and drainage. These cases will clear up quickly and remain permanently cured.

I do not know of anyone who has claimed to cure chronic rheumatism by tonsillectomy. I have not seen any such claims—not to say cures. We do relieve and often cure the acute cases. That has been demonstrated beyond the peradventure of a doubt, but as Dr. Murray has said, I have performed tonsillectomy in a hundred cases of chronic rheumatism and have followed them as closely as I could, yet I have failed to see any one of the series who has been in any way benefited.

As regards the removal of tonsils, a large tonsil may be an innocent one. Perhaps some surgeons are over-zealous and operate on cases that really do not require a tonsil operation; consequently, many tonsils are needlessly sacrificed. When in doubt, careful examination by transillumination should be made to determine the presence or absence of tonsillar disease.

A word in conclusion; since using the LaForce method, by which the tonsil is completely removed in its capsule, I am free to confess that many operations I have performed by blunt or sharp dissection were incomplete.



Minnesota Medicine

OWNED BY THE MINNESOTA STATE MEDICAL
ASSOCIATION

PUBLISHED BY ITS EDITING AND PUBLISHING COMMITTEE

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Subscription Price: \$2.00 per annum in advance. Single Copies 25c
Foreign Countries \$3.00 per annum.

Vol. I January, 1918 No. 1

EDITORIAL

SALUTATORY OF "MINNESOTA MEDICINE" BY THE EDITING AND PUBLISHING COMMITTEE.

With this issue of *Minnesota Medicine*, the Minnesota State Medical Association has joined the ever lengthening line of states that own and publish individual monthly journals. State journals constitute a distinct class in medical journalism, and have certain functions that the many excellent special and general medical periodicals can not possibly fulfill. By their frequent appearance on the desks of the members of the State Association, the members are reminded that they are integral and necessary parts of a wide-awake organization and will be kept informed of whatever is happening in medical circles in their own state and, by their jour-

nal's close affiliation with the exceedingly efficient organization built up around the Journal of the American Medical Association at Chicago, with national and international affairs of importance in the world of medicine.

Thirty-five states are now officially represented by ethical publications; Minnesota, North and South Dakota, Montana and Wyoming constituted the largest block of states without official ethical state journals until *Minnesota Medicine* appeared on the horizon. May its example spread westward until this blotch is entirely removed from the map!

Minnesota Medicine is the twenty-eighth state publication to fall in line. Although a little late in coming into the ranks it is vastly better to be late than not to have arrived at all. Now that the Minnesota profession has taken this step it is a foregone conclusion that it will never regret it and will soon feel the value of the bond its own journal will make between its various component county and district associations, and above all, the bond that will bind the entire membership into a more homogeneous whole. There is no better instrument to do this thoroughly than a mutual interest in the success of an undertaking that requires team work from top to bottom for its success, and at the same time furnishes the measures by which the state organization and the profession of the state will be given its rating by the profession of the country at large. By what other means could the purpose of the Minnesota State Medical Association, as outlined by its founders many years ago, be as thoroughly or as effectively accomplished? They are:

To federate and bring into one compact organization the entire medical profession of the State of Minnesota;

To extend medical knowledge and advance medical science;

To elevate the standard of medical education;

To secure the enactment and enforcement of just medical laws;

To promote friendly intercourse among physicians;

To enlighten and direct public opinion in regard to the great problems of State Medicine; so that the profession shall become more capable and honorable within itself, and more useful to

the public in the prevention and cure of disease, and in prolonging and adding comfort to life.

Minnesota Medicine will be under the control of the Editing and Publishing Committee of the State Association. The personnel of its Editorial Staff is given above. Mr. J. R. Bruce of the Northwestern Druggist is its advertising manager.

The policy of the journal on all questions will be to remain independent, not to be the mouth-piece of any individual or any group, and to work only for the best interests of the profession and the public.

The scientific papers read at the Annual Meetings of the State Medical Association will appear, as will many other papers read at the numerous meetings of the county, district and special societies of the state, subject to the approval of the Editorial Staff in consultation with the Editing and Publishing Committee.

There will be a department of medical news in which will be found from month to month items of general and local interest to physicians of the northwest.

The advertising policy of *Minnesota Medicine* will be strictly in conformity with the rules of the American Medical Association and its Council on Pharmacy and Chemistry,—everything appearing in the advertising pages being edited as carefully as the reading matter.

ACTION OF THE HOUSE OF DELEGATES IN REGARD TO THE ESTABLISHMENT OF A STATE MEDICAL JOURNAL.

After a free and general discussion, Dr. Buckley moved that the matter of publication of a state medical journal be referred to a committee of five, with instructions to report details before the final adjournment of the House of Delegates.

Motion seconded by Dr. Smith, and carried.

The President appointed on this committee Drs. W. J. Cochrane, Robert Earl, J. M. Armstrong, E. R. Hare, and M. W. Smith.

This committee reported to the final session of the House of Delegates as follows: (1) That an Editing and Publishing Committee consisting of five members be appointed by the President of the Association, two members from the Hennepin County Society and two members from the Ramsey County Society, and one from

the state at large. That the executive committee of the Hennepin and Ramsey County Societies shall each recommend to the President of the State Association the names of three of their members from whom the President shall choose his appointees, each member of the Committee to serve five years. The members of the first Committee to be appointed as follows: One member for one year, one member for two years, one member for three years, one member for four years, and one member for five years. Thereafter one member shall be appointed each year for a term of five years.

(2) That the Editing and Publishing Committee shall have full control of the editing and publishing of the journal, and the appointment of the editors and business manager, and shall determine their compensation.

(3) That the State Association pay the Editing and Publishing Committee the sum of one dollar per year per member in consideration for which each member of the Association shall receive a copy of the journal for one year.

(4) That an associate editor be appointed for each Councilor District.

(5) That the profits derived from the publication of the journal be paid into the treasury of the State Medical Association and any deficit arising from the publication of this journal be paid from the treasury of the Association.

(6) That the offer of the Editing and Publishing Committee of the Ramsey County Medical Society to turn their journal over as a free gift to the State Medical Association be referred to the Editing and Publishing Committee to be appointed.

Wm. Cochrane (Chairman).

A. E. Spalding.

Earle R. Hare.

Robert Earl.

J. M. Armstrong, (Secretary).

ELIMINATING THE MENTALLY UNFIT FROM THE U. S. ARMY.

The State Medical Association was fortunate in having as its guests at the Annual Meeting in October last, Captain S. E. Abbot and Captain C. C. Beekley of Fort Snelling. These gentlemen brought before the Association an interesting phase of the great problem now facing the United States in preparing its vast army, a

phase, in fact, so little known and of such great importance that we shall give *in extenso* the remarks of these medical officers.

Dr. C. E. Riggs, chairman of the medical section of the state meeting, in introducing Captains Abbot and Beckley, stated that he did not believe we realize what foresight and painstaking care the United States Government is manifesting in order to eliminate the mentally incompetent and nervously unfit from this great army that is in process of making at the present time. When we are told that next spring there will perhaps be two and a half millions of men under arms we can form some idea of what that great task is. One thing is very sure—and this war has demonstrated it perfectly—and that is that the psychopath and the neurotic are not wanted on the firing line.

Captain S. E. Abbot, of Fort Snelling: The United States is doing what I do not suppose has been done before. In all wars and in all time, I presume that the physically unfit, both officers and men, have been eliminated frequently. In this war, since the United States has entered it, they are trying to eliminate not only the physically unfit but the mentally unfit as well, and those whose constitutions are not equal to standing the tremendous strain which is greater in this war, with modern methods of warfare, than probably has ever appeared in any war before.

In order to help in this way, the Government issued in July a little circular which is called Circular 22, issued from the office of the Surgeon General, and the introductory paragraph of that I wish to read:

"For the Safety, Efficiency and Economy of the Military Service.

"It is highly essential that mental and nervous diseases be recognized at the earliest possible moment. Nervous and mental diseases may and frequently do exist in persons who are strong, active and apparently healthy, who make no complaints of disability. Such persons are however more than useless as soldiers, for they cannot be relied on by their commander, they break down under strain, become an incumbrance to the army and an expense to the Government.

"Disorders of this character are often demonstrable only as a result of painstaking and

special examination, directed toward the mind and nervous system.

"This circular is published for the special purpose of calling the attention of medical officers to the particular diseases most frequently overlooked on general examination, and the symptoms most important to their diagnosis and to certain characteristics in the personality and in the behavior which may raise the question of the existence of mental disease."

In order to get at these men, not only are the physicians, psychiatrists and neurologists, who come to the camp, expected to go over the personnel, but the officers, both commissioned and non-commissioned, of the camp, are requested to notify the camp surgeon or these psychiatrists and neurologists of such men as in the course of their observation show these characteristics: irritability, seclusiveness, sulkingness, depression, shyness, timidity, over-boisterousness, suspicion, sleeplessness, dullness, stupidity, personal uncleanness, resentfulness to discipline, inability to be disciplined, sleep walking, nocturnal incontinence of urine, and any and various characteristics which gain for those displaying them the names of "boob," "crank," "queer stick," "gink," and other such terms of derision.

Those are the characteristics that may lead to the detection of either mental defect or mental disease, or a predisposition to break down.

It is up to us, psychiatrists and neurologists—I do not regard myself as a neurologist—to find these people.

My own personal detail is to the reserve officers training camp, and the method that I have used, and which is recommended, is that at the various examinations we test each man for the pupillary reaction by flashlight; tremors of the face, of the facial muscles, the tongue, and of the extended fingers; the knee reflexes; and the station on one foot with the eyes closed. These we can do rather quickly while the men are being examined for other conditions, such as tuberculosis—not actually simultaneously, but without wasting their time.

Then any men who show these symptoms are listed, and we take each man separately for more intensive study. We go over him with more or less a fine toothed comb, to see if we can determine the existence of any organic

nervous disease, any mental disease in its inefficiency, or any mental defect.

It is not to be expected that we should find feeble-mindedness among the men who have entered the reserve officers' training camp. They have already been pretty well weeded out, and they are pretty intelligent men; all of them, I rather think, are high school graduates, many of them college graduates, and some of them are graduates from professional schools. So I have not thus far found any that I could call feeble-minded, although there are some men whose judgment is not very good and whom I have not eliminated, but the officers have eliminated because they are evidently not made up of "officer material."

The results in the different camps vary. Either I am incompetent or the quality of the men in some of the other camps is not as good as this group here that is now in training. I am told that from one to two per cent. of the men in training should be eliminated on the ground either of mental disease or of predisposition to disease, such as a psychasthenic make-up, or hyperthyroidism. I am not finding that proportion here.

In one of the big training camps, I do not know which camp it was, the examiners reported that they found from one to two cases of general paresis or of cerebro-spinal syphilis in each company of about 135 men. I am not finding any such proportion as that. It may be that the men from Iowa, Minnesota, North and South Dakota, and Nebraska, are cleaner living men than those from Massachusetts, New York, Pennsylvania, and so on. It was at the Plattsburg camp that that preliminary report was made.

That is what my work is. I think you will be interested to know that besides this, the American Psychological Society has formed a committee which has been at work to devise tests for mental defectives, which can be applied en masse, thus saving a great deal of time. It will be of help for example, in examining the enlisted men.

They are trying to devise standardized tests which can be applied to group after group, and which will not be affected by any coaching which one group can give to the next. Always the men talk these things over and try to coach

each other up, so a number of equivalent tests have to be devised. Some of the tests, for example, are like this: the men will all be grouped in a room, one hundred or two hundred perhaps at a time, or two companies at a time, and they will have a set of papers on which are printed a list of ten numbers, say of seven digits each, and the men will be told to arrange those numbers in the order of their size. That means that each man has to look at each of these seven digits carefully in order to determine its relative size as compared with the next number. He is given a definite time in which to do it. If he does not do it in a certain time he is not up to a certain standard. That is one type of test.

Another type of test is a problem something like this: a man is told that he has a seven-quart pail and a two-quart pail and he is to measure out water by means of these two pails so that he can get exactly six quarts, not by guesswork but by actual measurement. In a test like that, one has to have different numbers other than seven and two, so that successive groups of men will not coach each other on how to answer the problem.

Other problems will be something like this: a man is given a sheet of paper on which are printed certain directions such as, "If January is one of the summer months put a dot after the middle of your own name. If it belongs to some other season do nothing at this point (and then there is a blank) but go on with the next question;" and so on, giving them a number of mixed directions which are a little puzzling, and unless the man keeps his head he is going to make mistakes in it.

There are a number of tests of that kind, standardized and varied. You can put a large group of men through those in an hour rather readily, picking out those that fall down. These men can be studied more intensively for their exact development by other methods, or can be studied for any causes of backwardness. That is one of the ways in which they are trying to test out these men.

It is hoped that these psychologists will work in co-operation with the psychiatrists and neurologists.

At each of the training camps for men in the new draft and for the reserve officers, they are

trying to assign psychiatrists and neurologists, and where they can, psychologists. They already have been able to place in the camps about two hundred psychiatrists and neurologists. I do not know whether all the camps are supplied with them or not, but they will probably need some more.

I think that gives a little idea of what "Uncle Sam" is trying to do to eliminate certain types of unfitness.

We have this advantage in this country in this work, that we can profit by the experience of the other nations who have been at war. France, England and Canada find that of the men who break down, and have perhaps shell shock, constitute about ten per cent. of the number of soldiers that are invalided home.

Now, upon examining these men and going into their histories carefully, they find a very large proportion of those who have shell shock showed certain neurotic antecedents long before the war. They find, for example, that they have shown fear: some kind of phobia, as of jumping off of high places, a little hesitancy to cross a high bridge, a fear of being crushed in a crowd; or impulses, the feeling that they must do some foolish thing; or that they have been subject to sleeplessness; or that they have recurrent nightmares; or that they are timid; or that there are certain physical neurotic symptoms, and so on. That helps us a great deal to pick out beforehand the men who are liable to do that. They did not have the chance we had, and so we can profit by their experience to do a little preventive work.

In this Government circular it speaks of the effect on the military service and the economy to the Government. What it does not mention is the individual himself, who has these disabilities. It seems to me that he, too, needs to be considered, and it is just as much for his benefit that he be eliminated. It is not quite right to send a hyperthyroid case into the front, where he is certain to break down, if there are plenty of men who do not have that disability. And so, in the case of the man with a bad heredity, who shows certain neurotic traits, although he may be a very keen, bright and intelligent fellow, yet is certain to break down, let us save him.

I think that we can do it also on the ground of the man's right to himself not to be unduly subjected to this stress and strain.

Dr. Beckley will tell some of the work that he has actually accomplished. He has been at the work a little longer than I have.

Captain C. C. Beckley, Fort Snelling: I have been at Fort Benjamin Harrison for two months. I was sent there from the camp in which I was receiving training in military matters. My orders read to proceed to Fort Snelling and report to the commanding officer, to make examinations in special work, in mental and nervous diseases. I had no other instructions. I got there and found some six thousand to eight thousand men whom I was supposed to look over and examine and pick out the incompetent from a mental and nervous standpoint. Lieutenant Truitt had been there for two or three weeks and had examined some of the first training camp, and he asked me to go over his findings and talk them over with him. So I know a little about the men in the first training camp.

The officers have given me every opportunity to examine and to pick out the men. The ward surgeons, the regimental surgeons and the line officers have all co-operated very well.

As has been told you, in devising the method, we have gone on rather slowly, and feel that as time goes on, and we get organized better, we can do more work. At first I trained the sergeant to test the reflexes, the station, the gait, the pupillary reactions, and to note the tremors; and he has in six weeks examined 3,297 men, and of this number has selected 184 to refer to me for further investigation. He has been at this work for about six weeks. Some weeks he examines a large number, as many as 800 or 900, and other weeks not more than 200 or 300. He takes the men as they come down for an examination of their lungs. After that he takes them into a tent and examines them in that way; so he does not disturb the routine of the regiment any more than can be avoided, and is also able to keep pretty well ahead of them in the work.

I have thus far examined more or less thoroughly 246 men. Of course, this is rather slow work, in going over the men and examining them fairly thoroughly, which we have to do,

to pick out some of the minor things. It has been quite a question in the border line cases as to just which men should be discharged and which men should be kept, to know just where to draw the line.

You might be interested in knowing about the conditions which we have found. Some of these should have been discovered by the man making the first examination, and the person never should have been admitted.

Dementia precox, five cases. Of these, two had escaped from some hospital where they had been detained, and had joined the army so that they would not be taken back.

Maniacal depressive psychoses, two cases; in both of these the condition had existed prior to enlistment. One of them had been in a hospital for the insane. The parents and the family physician of the other man recognized his condition, and they did not consider that there was anything in his being taken into the army, as they expressed it. They knew he could not pass the examination they said.

Epilepsy, grand mal, seven cases; petit mal, one case. There are undoubtedly other cases which have not been determined as yet, and which are still on my list, under observation. Before discharging a man for epilepsy we make sure that he is a real epileptic and that he has real epileptic attacks, and that such attacks are observed by someone who is competent to distinguish an epileptic attack from a simulated one.

Constitutional psychopathic state, three cases; psychoneuroses, two cases; defective mental development, eight cases.

In discharging patients for defective mental development and feeble-mindedness, I not only make the diagnosis, but I come in touch with the line officers and get reports from them and find out how the man does in his drills, whether he is competent to do the duties of a soldier or not. I send the sergeant whom I have working with me, to the sergeant of the company to get a report from the non-commissioned officers and to talk the man over with some of his mates. In that way I am trying to determine just where to draw the line in mental deficiency.

Most of these cases have been tested by the Yerkes-Bridges point scale. It takes consider-

able time to make an examination and to write up the histories, so that I am not doing it as rapidly as might be wished.

Exophthalmic goitre and hyperthyroidism, six cases, which have all been discharged. Neurasthenia, one case; narcolepsy, one case.

I have had two cases in men who have a psycho-neurosis, plus muscular spasm, with a long history.

Another case seemed to be classical myotonia congenita, dating from childhood, sometimes so severe that the spasms threw him off his feet. He has recently developed hysterical symptoms, and there is no question but that he needs to be discharged.

Multiple neuritis, one case; brachial neuritis, one case; multiple sclerosis, one case; and spinal syphilis, one case. This case of spinal syphilis had a positive Wassermann of the spinal fluid. Other cases which I have thought were not cerebro-spinal syphilis have been proved out when I have obtained the laboratory findings. I have one or two on my list under observation, and in one or two I have made some other diagnosis.

Those that I have spoken of are from the enlisted men. In other departments I have found, maniacal depressive conditions, two cases; general paralysis, one.

In the first training camp you will be interested to know what we found. I arrived there just before the camp was breaking up, so they were not entirely examined, but in the first officers' training camp there were found nine who were considered unfit to receive commissions on account of some nervous or mental condition. Included in this number were the following: multiple neuritis, one; constitutional mental inferiority, one, a very well marked case; history of past mental disorders, one.

Aside from these on whom I have made definite diagnoses, or have advised their discharge, I have written letters to the regimental surgeons asking them to observe, treat and report on certain other men. The list includes men with marked tremor and unsteadiness, with very little in the way of neurological findings that I have been able to bring out, four cases; men with moderate tremor, nine cases; alcoholism, three cases.

Many of these cases with moderate tremor or with marked tremor, I think are due to two or three causes. There are undoubtedly others that I do not know about. I am very much interested in the question of some of these tremors, and I have these men under observation, hoping to be able to determine just what has caused it in most instances. Some of them give a history of alcoholism for a long time or using tobacco to excess, including snuff, and probably they get up a toxic condition, which does produce a tremor. In others the tremor seems to date from some injury, an injury to the mind, in which they have received a good deal of a fright, and they give a history of having the tremor develop at that time. Two or three have tremors which they say they always had, which they have had from childhood, and I believe it is supposedly an inherited condition, as certain people do have these tremors.

Some of these tremors and unsteadiness are very marked, so that there is no question that these men will not be able to hit a very small mark with a rifle. I have considered and have talked with some of the officers, whether it was possible in some of these instances that the men might not be given special work, or whether it was necessary for every soldier to be able to do every kind of duty. Of course, many men with tremors and things of that kind, although they could not throw bombs and could not shoot straight, they could handle baggage or lay rails or dig trenches, and things of that kind; and if discharged, will come back doing that sort of work. That has not been worked out, and I do not know whether it is possible to work it out or not.

Men complaining of dizziness and faint spells, nine. Some of these I believe have epilepsy. Some of them give a history of having had one or two convulsions in childhood, and since then of having had recurrent dizzy spells. I have an idea that some of these cases are mild epileptic conditions. I am trying to get more facts on them; I am trying to have them observed by the non-commissioned officers, by the officers and the regimental surgeons.

I have one man under observation, with a mild mental depression, more of a low spiritedness. It hardly seems that it is sufficient to discharge him or to warrant his discharge, it may

be due to something which has happened in his past life which has worried him.

Syphilitic conditions under observation, five. Enlarged thyroid, with no toxic symptoms, eight. Enlarged thyroid, with slight toxic symptoms, four. Those cases having slight toxic symptoms will probably have to be discharged.

In the discharging of men, the history has to be written up and filed, and a certificate of disability made out and signed by the examining surgeon and by the commanding officer. These have to be made out in a certain definite way, in order to prevent a person who was enlisted with a certain condition, a condition which existed prior to enlistment, coming back later and claiming a pension.

So, for those recommended for discharge on account of some certain disease, who become unfit for duty, from present disease or injury, of which we get a history and know that it existed before he came into the service, we put in there, "prior to enlistment," and that when the disability arose the patient was a civilian. Then we have to fill out on the other side the condition found, and how it demonstrates itself, and why it incapacitates the man from performing the duties of a soldier. We put in "Opinion," based on the history of the case, whether it existed prior to enlistment or not.

These papers go before a board of two medical officers, who review the case, and their attitude is as it should be: "You have to show me that this man has a disability, and that he does have to be discharged." If they consider that the man ought to be discharged, they recommend his discharge, and it has to go to the headquarters of the department before the man can be released, and before he gets his final discharge papers.

The officers and men in the training camp go before another board, and the procedure is somewhat different.

Dr. J. T. Christison, St. Paul: I think I voice the sentiment of this section when I say that we all feel deeply indebted to Captain Abbot and to Captain Beckley for bringing before us this new phase of army life.

It is especially beneficent, it seems to me, in eliminating the unfit. It does two things. It

saves that man for some future usefulness, where he might possibly go to pieces under the strain of army work, and it saves his commanding officer the chagrin that might accrue as the result of having such a man in his command.

I therefore, Mr. Chairman, move you that a vote of thanks be tendered these gentlemen by this section for their kindness in coming before us this morning.

(The motion was duly seconded and was unanimously carried by a rising vote of those present.)

EVERY DOCTOR IN THE MEDICAL RESERVE CORPS.

What an ideal situation it would be if every doctor in the United States who is mentally, physically, and morally fit, was in this Corps!

The time is coming, and in the immediate future, when the Medical Reserve Corps of the Army must be immensely augmented. Therefore, to enable the Surgeon General to have at his command for immediate assignment, as conditions demand, a sufficient number of trained medical officers, let us take the above thought seriously.

We all know from past history the conserving value of an efficient medical corps, and this means number as well as training.

A statement made by one high in authority in the Surgeon General's Office, "that our fighting forces would be decimated by sickness and casualties in six months, were it not for an efficient army Medical Corps," clearly emphasizes the importance of every doctor in the United States meeting the requirements above referred to and accepting a commission in the Medical Reserve Corps of the United States Army.

The struggle in which we are now engaged, and for which we are preparing to take such a prominent part, depends for its success as much upon the medical profession, as it does upon our combatant forces; and while we do not know that any such intention as herein suggested is in the mind of the Surgeon General, it would at least give him the necessary Corps of medical officers upon which to draw, and thus serve the best interests of our country, as well as the best interests of the medical officers themselves.

DR. WEIL DIES IN SERVICE.

The loss of Major Richard Weil, who died of pneumonia on November 19th at Camp Wheeler, Macon, Ga., will be keenly felt in cancer research work. Dr. Weil was a valued member of the American Society for the Control of Cancer. He gave up his work, before war was declared by the United States, to enlist in the service, and was assigned after his training, as Chief of Staff of the Medical Reserve Corps at Camp Wheeler. Dr. Weil was prominent in the work for cancer research at the General Memorial Hospital and was Assistant Director of the cancer laboratories of Cornell University Medical College in New York.

APPOINTMENTS OF THE STATE BOARD OF HEALTH.

Gov. J. A. A. Burnquist made the following appointments on the State Board of Health to take effect January 7th, 1918:

Dr. George D. Head, of Minneapolis.

Dr. Neill M. Watson, of Red Lake Falls.

Dr. R. C. Hunt, of Fairmont.

These gentlemen replace:

Dr. W. A. Jones, of Minneapolis.

Dr. C. W. More, of Eveleth.

Dr. F. N. Hunt, of Fairmont.

Since the above, Dr. Head has declined to serve. Dr. J. G. Cross, of Minneapolis, was then appointed, but he has also declined to serve.

Dr. W. A. Jones was appointed as a member of the Board in 1906 and elected President in 1910, when that office became vacant by the death of Dr. Henry Hutchinson. He has been a hard working and valuable officer to the State Board of Health.

DR. C. W. MORE OF EVELETH IS GIVEN A PLACE ON THE ADVISORY COMMISSION OF THE STATE SANATORIUM FOR CONSUMPTIVES.

Gov. J. A. A. Burnquist has appointed Dr. C. W. More, of Eveleth, on the Advisory Commission.

Dr. H. Longstreet Taylor, whose term expired, has served on the Advisory Commission as its President since the Commission was creat-

ed by the legislature of 1903. He had also been President of the first Commission, appointed in 1901. Dr. Taylor has always been an enthusiast in anti-tuberculosis work. He has been instrumental in establishing fifteen public, one charitable, and one private institution, and has seen almost 1,500 beds dedicated to the consumptive population of Minnesota during his term of office.

NEW AND NON-OFFICIAL REMEDIES

During November, 1917, the following articles have been accepted by the Council on Pharmacy and Chemistry for inclusion with New and Non-official Remedies:

Farbwerke-Hoechst Co., New York, Salvarsan.
Borcherdt Malt Extract Co., Borchardt's Malt Sugar.

Paraffin for Films (Surgical Paraffin, Plastic Paraffin).—Paraffin intended for application to burns, etc., should be more ductile and pliable than the official, paraffin, and be liquid at or below 50 C. Thin films should be pliable at or below 28 C. and ductile at or below 31 C., and somewhat adherent to the skin. Paraffin for films is used mainly in the treatment of burns. It is used also to prepare "paraffin covered bandages" and to seal gauze dressings. In the paraffin treatment of burns, the wound is cleaned and dried; a thin coating of liquid petrolatum or melted paraffin for films is applied, and is followed by a thin layer of cotton and another layer of cotton; another layer of melted paraffin is applied, and the whole then bandaged.

Stanolind Surgical Wax.—A brand of paraffin for films melting at 47 C., being pliable at or below 25 C. and ductile at or below 29 C. Standard Oil Company of Indiana, Chicago (Jour. A. M. A., Nov. 3, 1917, p. 1525).

Silver Protein-Squibb.—A compound of silver and gelatin, containing from 19 to 23 per cent of silver in organic combination. Like other silver protein compounds, it is used in from 1 to 25 per cent or stronger solutions for prophylaxis and treatment of the sensitive mucous membranes, particularly in gonorrhea, conjunctivitis and other infections of the urethra and of the eye, ear, nose and throat. E. R. Squibb and Sons, New York.

Arsenobenzol (Dermatological Research Laboratories).—A brand of arsenphenol-amine hydrochloride. Its actions, uses and dosage are the same as those of salvarsan. It is supplied in ampules containing 0.6 Gm. The General Drug Co., New York City.

Acetylsalicylic Acid-Milliken.—A brand of acetylsalicylic acid complying with the standards of New and Non-official Remedies. It is sold only in the form of 5 grain capsules and 5 grain tablets. Jno. T. Milliken and Co., St. Louis, Mo.

Acetylsalicylic Acid (Aspirin), Monsanto.—A brand of acetylsalicylic acid complying with the standards of New and Non-official Remedies. Monsanto Chemical Works, St. Louis, Mo. (Jour. A. M. A., Nov. 17, 1917, p. 1695).

PROPAGANDA FOR REFORM.

"Patent Medicines" here and in Canada.—The federal law governing the interstate sale of "patent medicines" prohibits false and misleading statements in regard to composition and origin and false and fraudulent therapeutic claims. The Canadian law offers no protection against false, misleading or fraudulent statements that may be made for products of this class. As a result, many claims made for "patent medicines" when sold in Canada are not made when the same preparations are sold in the United States. An examination of Dodd's Kidney Pills, Doan's Kidney Pills, Williams' Pink Pills for Pale People, Paine's Celery Compound, Hall's Catarrh Medicine, Hood's Sarsaparilla, Dr. Chase's Nerve Pills, and Gino Pills as sold here and in Canada leads to the conclusion that the "patent medicine" industry as a whole is founded on falsehood, and that misleading and false claims will be made for such preparations, at least in the majority of cases, just so long as manufacturers are subject to no restraint except their own consciences. (Jour. A. M. A., Nov. 10, 1917, p. 1636).

Shot-gun Vaccines for Colds.—There is no reliable evidence for the value of mixed vaccines in the prevention or treatment of common "colds" and similar affections. The Council on Pharmacy and Chemistry accepted for New and Non-official Remedies mixed vaccines only on condition that their usefulness has been established by acceptable clinical evidence. So far it has not admitted any of the "influenza" or "catarrhal" mixed vaccines. (Jour. A. M. A., Nov. 10, 1917, p. 1642).

Iodeol and Iodagol.—Iodeol and Iodagol (formerly called Iodargol) are the products of E. Viel and Company, Rennes, France. They have been widely and extravagantly advertised in the United States as preparations containing colloidal, elementary iodine, and with the claim, that, because of the colloidal state of the iodine, they possessed the virtues but not the drawbacks of free iodine. As the result of chemical examination, pharmacologic, bacteriologic and clinical investigation and a study of the submitted evidence, the Council on Pharmacy and Chemistry declared the products inadmissible to New and Non-official Remedies because they did not contain the amounts of iodine claimed; because the iodine was not in the elementary or free condition but behaved like fatty iodine compounds, and because the

therapeutic claims were exaggerated and unwarranted. The American agents, David B. Levy, Inc., announce that the sale of Iodeol and Iodagol has been discontinued. (Jour. A. M. A., Nov. 17, 1917, p. 1725).

The Carrel-Dakin Wound Treatment.—Arthur Dean Bevan holds that the value of the Carrel-Dakin method of treating infected wounds has not been established. He has been forced to the conclusion that Carrel's work does not meet the requirements of scientific research. Bevan believes that the choice of antiseptics in the treatment of infected wounds is of little moment, and that the use of the Carrel-Dakin fluid, like Koch's lymph, Bier's hyperemia and the vaccine therapy of acute infections, will have a short period of popularity. (Jour. A. M. A., Nov. 17, 1917, p. 1727).

Sphagnum Moss, A Surgical Dressing.—In England, sphagnum moss, or peat moss, is being used as a substitute for absorbent cotton. The dried moss is said to absorb twenty-two times its own weight of water, while absorbent cotton will not absorb more than six times its weight. For surgical use the dried moss is packed loosely in muslin bags which are then sterilized by heat or chemicals such as mercuric chloride. (Jour. A. M. A., Nov. 24, 1917, p. 1796).

Adulterated Imported Drugs.—The U. S. Department of Agriculture announces action against imports of adulterated drugs. Belladonna root was adulterated with yellow dock; cantharides was adulterated with so-called Chinese blister flies, and cinchona bark offered for entry was deficient in alkaloid. Other drugs were illegally labeled. (Jour. A. M. A., Nov. 24, 1917, p. 1792).

Bell-ans (Pa-pay-ans, Bell).—Bell-ans, formerly advertised as Pa-pay-ans (Bell) in medical journals, is now advertised in newspapers and in medical journals. Among the extravagant claims made for this preparation is the claim that there is no derangement of the digestive organs on which the proper dose of Bell-ans will not act quickly and pleasantly. Instead, proper treatment must aim to determine the cause and attempt its removal, the choice of drugs depending on the conditions that give rise to indigestion. The treatment of indigestion by a single prescription or combination is wholly irrational. While Bell-ans, under its old and new name, has been alleged to contain papain or to be some preparation of the digestive juice of the fruit of *Carica papaya* with other substances, chemists have failed to find papain or to determine the digestive power of the tablets. Bell-ans is essentially a tablet of sodium bicarbonate and ginger, and has all of the virtues, which are few, and all of the limitations, which are many, of a tablet of sodium bicarbonate and ginger. The Council on Pharmacy and Chemistry examined Bell-ans nearly eight years ago, and the statements made in that report are as incontrovertible today as they were then. (Jour. A. M. A., Nov. 24, 1917, p. 1815).

The Handicap of Proprietorship in Medicine.

—Dr. J. J. Mundell protests because his article on the present status of pituitary extract in labor was abstracted in "Therapeutic Notes" in a way which appears to him a gross misrepresentation of his attitude toward the use of pituitary extract. Being a house organ, "Therapeutic Notes" contained only those portions of Mundell's article which may be expected to promote the firm's proprietary pituitary preparation. The references to the dangers and the limitations of pituitary extracts were not abstracted. (Jour. A. M. A., Nov. 24, 1917, p. 1818).

Salvarsan, etc.—Besides the German salvarsan and neosalvarsan, now practically unobtainable, the Council on Pharmacy and Chemistry has recognized diarsenol, neodiarsenol and arsenobenzol (Dermatologic Research Laboratories). It has under consideration salvarsan made by the Farbwerke-Hoechst Company, New York. Before accepting these preparations, the Council requires evidence to show that the products are manufactured under supervision which may be expected to insure their chemical identity and uniformity, and freedom from toxicity. However, in the past, untoward effects have been reported from German salvarsan and neosalvarsan, particularly with the last shipments of neosalvarsan. Recently untoward effects have been reported from neodiarsenol. It is expected that within a short time all salvarsan, neosalvarsan and the various products identical with these will be tested by the Government. (Jour. A. M. A., Nov. 24, 1917, p. 1819).

TEN YEARS OF THE FOOD AND DRUGS ACT.

Ten years of enforcement of the Food and Drugs Act of June 30, 1906, are reviewed in the current annual report of the Bureau of Chemistry, United States Department of Agriculture, which states that the Act's chief contributions to the safety of the people's health have been its corrective effect upon the drug and patent medicine industry, its control of trade in unclean milk, polluted, decomposed or filthy foods, and protection of foodstuffs from contamination with poisons likely to be met in manufacture.

The general effect of the Food and Drugs Act may best be estimated, says the report, by considering its effect upon food and drug control by the States; upon development of the food and drug industries, and by the principal abuses that have been corrected. But to illustrate the scope of the work through figures and facts the report points out that more than 6,000 prosecutions have been terminated in the courts in the first decade of the Act; that manufacturers have been cited at hearings more than 40,000 times, that many thousands of factory inspections have been made, and that more than 750,000 shipments of domestic or imported food and drugs have been examined.

Special attention has been given to shipments of polluted or spoiled food. Milk shipped in interstate commerce and imported from Canada has been im-

proved in cleanliness, purity, and the condition of sanitation under which produced. The canning of decomposed navy beans has been largely suppressed. Interstate shipment of oysters from polluted waters has practically ceased. Because of co-operation with State and municipal officials in controlling the shipment of bad eggs, it is reported that the quality of the eggs reaching the large cities is much improved. Other products, in whose handling and sale improvement has been noted, include mineral water, tomato products, fruit, vinegar and gelatin.

States Co-operate With Federal Laws.

One consequence of the enactment of the Food and Drugs Act was to encourage similar legislation in many of the States, the purpose of which is to control local traffic in food and drugs which, since no interstate commerce is involved, are not subject to the Federal law. For example, in 1906, many States had no feeding stuffs laws. A State could not prosecute a manufacturer unless he were a citizen of that State. The Federal law supplements the State law in this respect and now most of the States have similar laws.

In the beginning the confusion and apparent conflict between local and Federal laws and administration of laws not only made it difficult for the two sets of officials to co-operate, but often made it necessary for manufacturers to make special preparations for shipment to certain States at extra cost, the extra cost being passed on to the ultimate consumer. This evil has been remedied to a considerable extent by the organization of two agencies which in a large measure have removed some of the difficulties arising from the conflict of Federal and State jurisdiction. These agencies are (1) The Joint Committee on Definitions and Standards, and (2) The Office of Co-operative State, and Federal Food and Drug Control.

Development in Food and Drug Industries.

The Food and Drugs Act was one of the first laws which today would be classed as laws for the prevention of unfair competition. The report says that the suppression of fraud upon the consumer and of unfair competition among business rivals are "but the two faces of the same coin." In consequence the food industries are sincerely and actively helping the Bureau of Chemistry to enforce the law.

Frequently, the report says, the Bureau is appealed to by the industries to compel the cessation of unfair practices and to encourage the standardization of the products, when the industry is incapable by itself of bringing about these results. The Act is described as one of the influences which have helped to draw competitors together into association, like the guilds of the middle ages, although the modern associations lack the special privileges which the ancient guilds often enjoyed.

Some of the associations, understanding the value of constructive work, now devote considerable money to experimental research into technical problems. Thus is made available to the small manufacturer

scientific assistance ordinarily beyond his reach. Since the Bureau of Chemistry always has regarded it as its duty not merely to report violations of the law but also to prevent accidental violations, through constructive work in tending to improve methods of manufacture, it co-operates actively with such associations of manufacturers. Such co-operation, by the various Government agencies, says the report, is bound to exert the profoundest influence on the country's industrial and social development.

Abuses Corrected by Law.

The best evidence, according to the report, that many of the abuses formerly occurring in the food industry have ceased is found in the fact that the violations of the Food and Drugs Act observed today are hardly comparable, in degree, with those in the first few years following the enactment of the law.

Most of the staple-food products now found in violation either are of a higher grade than formerly or are products of clever adulterators who have more or less anticipated detection so that the adulterations have been found only by the most painstaking chemical analyses and factory inspection.

Consequently there has been a decided change in the direction of the work. In recent years it has developed quite noticeably in the direction of factory sanitation; of the study of spoilage and decomposition of foodstuffs, and of improvement through laboratory research of methods of detecting the more refined types of adulteration.

REPORTS AND ANNOUNCEMENTS OF SOCIETIES

ACADEMY OF MEDICINE.

The regular meeting was held at the Town and Country Club, December 12, 1917.

Preceding the scientific part of the program, members and guests stretched their legs as usual for an hour under the dinner table, which, by the way, is a very enjoyable feature of our monthly gatherings. Indeed, it is so enjoyable that sometimes it is difficult to get the members to break away from the delights of social intercourse and settle down to business.

The meeting being called to order by the president, Dr. Cross, the minutes of the last meeting were read and approved.

The next order of business being that of election of new members, it was moved that there be no election at this time, but that it be made a special order of business for the next meeting.

Dr. Little gave a short report of three cases. The first was that of a child one month old on whom he had operated for intussusception. He made his incision through the right rectus muscle. Considerable trouble was experienced in locating the telescoped

bowel. It was finally found up under the stomach. Five inches of the ilium had turned into the caecum through the iliaecocolic valve. This was released and reduced. The freed gut was fastened by catgut so that its reinvasion could not occur.

A second case was that of a woman hurt in an automobile accident. Besides a severe injury to the abdomen, she sustained a Pott's fracture of the right ankle. On opening the abdomen it was found filled with stomach contents, the rent being in the first part of the duodenum. In extent the wound was about one and one-half inches long. It was closed and the abdomen washed out. Thus far—the accident occurred the day before—she is doing well.

A third abdominal case was that of a man twenty-one years of age who was taken violently ill with pain in the abdomen. Upon opening the belly it was found that three feet of jejunum had telescoped into itself. Much difficulty was experienced in freeing it, some seven or eight hours having elapsed since intussusception took place. The gut was liberated, however, without cutting. The man made a good recovery.

Dr. Farr showed a carefully prepared specimen of the urinary tract, including both kidneys, both ureters, and the bladder. A suprapubic cystostomy had been performed eight days before death in a man of seventy who had for years suffered from an enlarged prostate. Microscopically, the prostatic enlargement showed adenoma. Both kidneys were enlarged, the ureters dilated, and the bladder wall greatly thickened.

He also related the case of a man on whom he had very recently performed a colostomy, showing by diagrammatic sketches some of the complications met with. The individual already had had his colon short circuited some time before. The society would be pleased to know if this man survived, for, if he did, it would be a great satisfaction to know that nature's handiwork may be so safely and advantageously readjusted.

Dr. Staples read a paper on "Portal Cirrhosis," and Dr. Earl a thesis on "Fractures of the Skull." Both papers were fully discussed.

There were thirty members and three visitors present.

F. E. LEAVITT, Secretary.

SOUTHERN MINNESOTA MEDICAL ASSOCIATION.

At the annual meeting of the Southern Minnesota Medical Association, on November 27th, 1917, new officers were elected as follows:

President, M. S. Henderson, Rochester.
First Vice President, A. E. Sohmer, Mankato.
Second Vice President, P. F. Holm, Wells.
Secretary, H. T. McGuigan, Red Wing.
Treasurer, G. F. Merritt, St. Peter.

THE UNIVERSITY INAUGURATES PHYSICIANS' DAYS.

The University of Minnesota Medical School is inaugurating "physicians' days" for the physicians of the state. The first meeting of the kind will be held during Automobile Week on Thursday and Friday, February 7th and 8th.

The clinical staff of the University Hospital will be on hand to welcome the visiting physicians. A program covering all the major clinical branches has been prepared—clinics, operative and dry, ward rounds, lectures, demonstration of the simpler practical laboratory procedures are included.

The faculty feel that they have a great responsibility to the profession of the state and they wish the profession to know it. The State Medical School should offer something tangible to the profession in the way of facilities, assistance and inspiration. They propose an "all-Minnesota-medics-get-together" movement for Minnesota and this is the initial move. The Medical School is anxious to do its part—all it asks is that the profession will come.

The program is as follows:

THURSDAY, FEBRUARY 7. ASSEMBLY.

9:00-10:00 a. m.—Clinic.....Dr. J. E. Moore
Obstetrics demonstration.....Dr. F. L. Adair
10:00-12:00 m.—Operative Clinic.....Dr. A. MacLaren
Operative Clinic.....Dr. W. R. Murray
2:00-3:00 p. m.—Medical Clinic.....Dr. L. G. Rowntree
Pediatric Clinic.....Dr. W. R. Ramsey
3:00-4:00 p. m.—Ward Rounds,
Nervous and Mental.....Dr. A. S. Hamilton
Children.....Dr. F. W. Schlutz
Medicine.....Dr. F. G. Blake
Heart.....Dr. A. D. Hirschfelder
4:00-5:00 p. m.—Demonstrations in Medical Laboratories.
Grouping of blood.
Phthalein Test and Alveolar CO₂.
Benedict for sugar.
8:00 p. m.—University Medical Society.
Remarks by the Dean.....Dr. E. P. Lyon
Eclampsia.....Dr. W. H. Condit
Dental Infections.....Dr. T. Hartzell
Disease in Cantonments.....Dr. F. C. Todd
9:30 p. m.—Laboratory Demonstrations.
Anatomy—Physiology—Pathology—Pharmacology.

FRIDAY, FEBRUARY 8.

9:00-10:00 a. m.
Gynecological Clinic.....Dr. J. L. Rothrock
Operative Clinic.....Dr. H. P. Ritchie
10:00-12:00 m.
Gynecological Clinic.....Dr. J. C. Litzenberg
Operative Clinic.....Dr. Howard Clark
1:30-2:30 p. m.—Medical Dispensary.
General Medicine.....Dr. J. P. Schneider
Gastro-Intestinal.....Dr. R. I. Rizer and
Dr. C. B. Wright
Tuberculosis.....Dr. F. W. Wittich
Heart.....Dr. Olga Hanson
2:30-3:30 p. m.—Clinic,
Mental and Nervous.....Dr. A. S. Hamilton
Medicine.....Dr. H. L. Ulrich
3:30-4:30 p. m.—Ward Rounds,
Medicine.....Dr. L. G. Rowntree
Dr. E. T. F. Richards
Dr. R. I. Rizer
Pediatrics.....Dr. W. R. Ramsey
4:30 p. m.—Clinical-Pathological Conference,
Institute of Anatomy.

PROGRESS IN MEDICINE AND SURGERY

WAR SURGERY: Colonel T. H. Goodwin (The Military Surgeon, Vol. XLI, No. 3), says sepsis has proved to be a very serious and general complication of almost every class of wounds. The soil is extremely polluted and the air heavily laden with dust as a result of the almost constant heavy shell fire, and further, the velocity of modern missiles is very high.

In the treatment of collapse, he advocates the patient's resting for an hour or two before dressing or examination and believes pituitary extract is of benefit in many cases. With wounds, adequate drainage and mechanical cleansing form the first essential steps.

The writer speaks favorably of the Carrel-Dakin treatment, but he states success depends on the closest attention to details, thereby showing the difficulties of such a method becoming practical. (British and American opinion agree on the necessity of following well-tried surgical principles rather than depending on very new antiseptics).

The problems of infection between hemorrhage and shock are either understood, or one has time to think; but with gas and gangrene, in either civil or military practice, treatment must be so immediate that the author's news are given verbatim:

"Due to the bacillus of malignant oedema or the bacillus perfringens (*B. aerogenes capsulatus*). Conditions favoring the development of gangrene are:

1. Retention of extravasated blood.
2. Interference with circulation.
3. Presence of masses of devitalized tissue.
4. Fracture and comminution of long bones.
5. Blood-stained dressing or clothes left in contact with the wound.

It usually occurs within the first three days. It may begin within a few hours, or the onset may be delayed for several days. The onset is often extremely rapid.

Signs and symptoms. (1) Crackling on pressure. (2) Brownish discoloration, 'bronzing.' (3) Limb swollen and tense. (4) Foul gaseous discharge. Tongue dry and furred. Vomiting, hiccupping. Temperature usually subnormal, never materially raised. A sudden fall to subnormal temperature is of very serious prognostic significance. Death usually occurs within forty-eight hours of onset.

Treatment. Free incisions; removal of dead tissues; thorough cleansing of the wound; hydrogen peroxide; drainage. If hand or foot is warm, do not, as a rule, amputate. If cold and insensitive, amputate at once, if the general condition of the patient permits."

In first aid work on fractures Goodwin advocates triangular bandages rather than roller.

Amputation may be called for:

"(a) As a primary measure when a limb is hope-

lessly shattered; when it is gangrenous, or when advanced gas gangrene has set in.

(b) As a secondary measure in cases running an unfavorable course. Indications are then similar to those in civil practice."

In joints the writer mentions the very important point of extension; and advises aspiration with bacteriological examination for diagnosis, and in septic cases injection of formalin-glycerin or iodoform ether.

Regarding head injuries the author states operation is very seldom necessary on account of general or local cerebral symptoms. As far as preventing future complications, little is known of the value of this, and intracranial manipulations in the presence of a septic wound should be avoided if possible. Decompression is rarely called for. Though one must act with progressive hemorrhage there is the grave risk of infecting the subdural space. A local abscess may require decompression. With depression, trephining is indicated if there is a wound, and one should not be deceived by an apparently superficial wound. The X-ray is necessary as a routine. Cleansing of the head wound is the chief work and should be undertaken as soon as possible. This consists in removal of readily accessible foreign bodies and dissecting away of ragged surfaces leaving drainage.

The treatment of spinal injuries is disappointing but if the skiagram shows a missile or fragment of bone lying against the spinal cord, operation is indicated.

Wounds of the chest have been, until this war, not treated on a wholesale scale and here again the author is quoted:

"If death does not occur immediately, prognosis is good.

Symptoms. Considerable shock is usually present. Usually, but not invariably, hemoptysis. Breathing is difficult and painful and as hemorrhage usually occurs into the pleural cavity there are symptoms of internal bleeding as well as dyspnea. Pulse, small and rapid. Diaphragm fixed. Surgical emphysema may occur.

Treatment. Absolute rest. Hypodermic injection of morphia, one-third of a grain; repeat, if necessary. Small quantities of liquid food.

Do not remove patient for at least a week.

Temperature usually rises within the first forty-eight hours and may remain at about 100° for ten to fourteen days.

Do not tap a hemothorax during the first week, as fresh hemorrhage will occur if this procedure be followed.

Bronchitis may be troublesome.

A three-hourly mixture containing 3 grains each of iodide of potassium and carbonate of ammonium usually gives considerable relief.

Infection of the hemothorax is common and should be treated as an ordinary empyema."

Monyhan stated at the Clinical Congress of Surgeons that it was common to resect ribs near the cartilaginous juncture, removing the lung from its cavity

and doing whatever was necessary. This simplifies considerably former lung technique with its complicated apparatus.

The writer gives the following indications for wounds of the abdomen:

"Indications for operation: Wounds of the liver usually do well and seldom require operative interference.

Wounds of the kidney seldom require operation unless for continuous bleeding, in which case nephrectomy should be performed.

Wounds of the small intestines are usually multiple. A primary operation may reasonably be performed under the following conditions:

1. If seen within twenty-four hours of injury and the general condition is good.
2. If only a small part of the whole abdomen has been traversed.
3. If it is certain that the peritoneum has been opened.
4. If patient's condition is becoming worse.
5. If conditions for operation are satisfactory.
6. If pulse is rising, or abdomen increasing in rigidity.

After operation, make a careful examination for any bleeding points before closing the abdomen."

The problem of trench feet appears to be one of proper toilet and one for the chiropodist.

GEORGE EARL.

THE DIVERSION OF THE PANCREATIC JUICE FROM THE DUODENUM INTO THE STOMACH. ITS EFFECTS UPON THE LEVEL OF GASTRIC ACIDITY AND UPON THE PANCREAS: Ernest G. Grey

(The Journal of Experimental Medicine. Vol. XXVI, No. 6, December 1, 1917), points out that the mechanism described for maintaining the optimum level of gastric acidity is designated by Boldyreff as the "self-regulation of the acidity of the contents of the stomach." In support of Boldyreff's hypothesis is the evidence obtained from many experiments carried out both on man and on animals, in which solutions of alkali and acid have been placed in the stomach. The introduction of acid fluid has led to a regurgitation of alkaline duodenal contents; whereas the introduction of alkaline solutions has called forth a secretion of acid gastric juice.

The experiments reported in this paper were carried out for the purpose of ascertaining how the stomach would react, in as far as the secretion of hydrochloric acid is concerned, to a more or less continuous influx of relatively strong alkaline fluid, prolonged throughout the cycle of digestion. Numerous studies have shown that any serious interference with the process of regurgitation leads to a rise in the acidity level of the stomach; i. e., to a state of hyperacidity. There is but little evidence, however, to indicate whether the acidity level will be depressed temporarily or permanently (hypoacidity) when alkaline material, in considerable amounts, continues to enter the stomach.

The influx of alkaline fluid was provided for by transplanting the larger pancreatic duct into the wall of the stomach after ligating and dividing the lesser duct. Specimens of test meal for analysis were withdrawn through gastric fistulas made after the method of Janeway.

Animals prepared in this manner served also to furnish additional information regarding the possible relation of the hydrochloric acid of the gastric juice to certain acute inflammatory and chronic sclerotic changes in the pancreas.

From the results of these experiments it appears that the presence of a considerable amount of pancreatic juice in the stomach throughout the period of digestion leads only to a moderate decrease in the acidity level of the injeesta in the later stages of digestion. Earlier in the process there is no constant alteration of the acidity level in either direction. The findings then serve not only to corroborate the views of Boldyreff, but also to demonstrate the remarkable compensatory activity of the gastric glands under conditions which entail an unusual quantity of alkali in the stomach.

In addition the work has shown that when the larger pancreatic duct is properly transplanted into the wall of the stomach, it may remain patent for months. In animals in which this operative procedure has been carried out, the pancreas has been found to undergo no inflammatory or other degenerative changes. This finding is regarded as evidence against the postulation of Hlava that gastric juice is probably responsible for the occurrence of certain cases of acute hemorrhagic pancreatitis.

ERNEST T. F. RICHARDS.

THE ELEMENTS OF SAFETY IN PROSTATIC SURGERY: Clarence Martin

(Interstate Medical Journal, Vol. XXIV, No. 11), states that many general practitioners and some general surgeons who occasionally perform a prostatectomy hesitate to advise such an operation because of its very high mortality. This impression is wrong, in that the urological surgeon does not have this experience, and that the mortality in their hands is well below 10 per cent. The means of keeping down the mortality of prostatic surgery are so clearly defined and productive of such definitely beneficial results, that the surgeon who does not employ them is not keeping the fullest faith with his prostatic patients. Martin emphasizes the necessity of a careful cystoscopic examination before a prostatectomy is performed. By this means such complicating conditions as carcinoma of the bladder, vesical calculi in diverticula, or a papilloma, may be detected even though the symptoms produced by them were overshadowed by the more subjective and objective symptoms of the enlarged gland.

Expertly done, the pre-operative cystoscopic examination will not jeopardize the operative chance of the patient. The surgeon must have a cleanly cut conception of the damage done to the kidney function

through long continued obstruction in order to keep the mortality low.

The suitability of individual cases for prostatectomy is based on the pre-operative cystoscopic examination, the determination of the elimination time and intensity of colorimetric tests, and of the urea output and blood nitrogen retention.

In many cases, pre-operative urinary drainage is an essential factor in reducing prostatic mortality. This is accomplished by continuous catheterization or preliminary cystotomy. The object of this treatment is to raise the index of renal efficiency and this is manifest by an increase in the urine's specific gravity and urea output. When these figures reach a stationary point the gland should be removed and not before. During this time the patient should drink large quantities of water and the bladder should be daily irrigated with some antiseptic fluid, preferably silver nitrate. The urine should be rendered acid and hexamethylenamine given in 20 grain doses every 4 hours for 24 to 48 hours. After this time the hexamethylenamine can be given in 10 grain doses. If the renal function has shown pronounced improvement, ether is quite safe and should be the anesthetic chosen.

Martin claims that it is only by a rigid adherence to these factors of safety that success in prostatic surgery is attained, and unless the operator is painstaking in his application of every pre and post-operative detail, and has an intelligent appreciation of its rationale, his prostatic surgery will not measure up to modern requirements.

E. M. JONES.

POSTURE IN CASES OF ABDOMINAL DRAINAGE: Roland Hill (*Annals of Surgery*, Vol. LXVI, No. 4), maintains that in the case requiring drainage, there has been delay. In abdominal cases where drainage is established it is not effectual for a much larger period than 24 hours.

The three important factors in abdominal drainage are gravity, intra-abdominal pressure and capillary attraction.

To secure the influence of gravity the patient is placed in one of the following positions:

1. Fowler position: this position has been generally in use. Hill points out that in order to establish drainage of spaces in front of kidneys the patient leans forward; this he regards as a great strain upon a patient with an already weakened heart and low blood pressure. The pelvis is lower than the pelvic arch and there is tendency for pus to accumulate in dependent pouches.
2. Prone position: patient is placed on the abdomen from 24 to 48 hours, the head of the bed elevated 10 to 12 inches, with a pillow under lower chest region. The position though uncomfortable is perhaps the most efficient. Purulent material is unable to become lodged in the spaces along the spine and pelvis.
3. Lateral position: patient on right side with pillow below liver region and turned so that pus will drain from in front of left kidney.

A series of 104 drained cases is reviewed. In the 47 cases in which the Fowler position was used, there were 5 deaths. In 57 cases (in 15 of which the lateral position was used), where the patient was prone there were 2 deaths. Hill in treating these cases gives them glucose 3 per cent and soda 2 per cent in solution per rectum by the drop method. Peristalsis is controlled by opiates and no food is given by mouth.

GEORGE GEIST.

TREATMENT OF PERNICIOUS ANEMIA—ESPECIALLY BY TRANSFUSION AND SPLENECTOMY: Geo. R. Minot and Roger I. Lee (*The Boston Medical and Surgical Journal*, Vol. CLXXVII, No. 22, Nov. 29, 1917), considers the treatment of pernicious anemia, especially by transfusion and splenectomy, from a study of 96 cases and the literature.

The first essential for treatment is a correct diagnosis. The diagnosis is not to be made on the blood smear alone and, unfortunately, is seldom made early.

A careful, detailed study of the activity of the bone marrow and red cell destruction is important for prognosis and therapy. Not only one but all of the three chief elements of the marrow must be studied: the polymorphonuclear neutrophiles, red cells, especially young red cells, and platelets. Observations on the latter are important. Certain elements, often taken to indicate stimulation of the marrow, do not always indicate this, or at least are not always associated with a favorable prognosis. Such elements at times are of bad omen.

The authors point out that certain types of pernicious anemia are to be recognized. Those types of cases that do the best spontaneously usually, but not always, receive the most benefit from treatment. Older patients are more apt to have a less relapsing and less hemolytic type of the disease than younger individuals. Cases with enlarged spleens, together with somewhat enlarged livers, when these enlargements are associated with and probably due to hemolytic activity, are apt either to have, or to have had, a more favorable course of the disease than those cases without such enlargements.

It is important that all cases should have proper general treatment.

Transfusion and splenectomy offer the best means for inducing remissions, though a remission can occur spontaneously as marked as those inaugurated by these procedures.

No case is too sick for transfusion. Transfusion can give rapidly symptomatic benefit. It may also, either directly or indirectly, rapidly or slowly, cause stimulation of the marrow or allow increased activity of the marrow, so that a remission is inaugurated.

Isohemolytic reactions will not occur with properly selected donors. Other reactions of unknown nature, usually much less severe, cannot at present be avoided. It is suggested that some reactions following transfusion may be dependent upon the fact that the patient has previously received transfusions of blood. Such reactions are, perhaps, associated with

a rapid and excessive accumulation of blood pigment in the body.

Splenectomy for pernicious anemia is a palliative operation. It checks the red cell destruction and increases the activity of the marrow. Good remissions follow splenectomy more consistently and uniformly than after other forms of treatment. Splenectomy is reserved for only selected cases in certain stages of the disease. It is a serious procedure, is not to be urged, but at times may be advised, provided the patient understands that its effect is only temporary. The cases of pernicious anemia that approach the disease hemolytic jaundice are the most suitable ones for splenectomy.

By means of transfusion and splenectomy the writers believe that patients do better and can be made more comfortable while they live, and that in certain instances they may perhaps live longer than without such treatment. Probably when transfusions are begun relatively early, so that the patients never remain very anemic for long periods, the best ultimate results will be seen.

Roentgen ray exposures of the spleen have at present shown no definite beneficial effect.

ERNEST T. F. RICHARDS.

CONCERNING THE CAUSATION OF EDEMA IN CHRONIC PARENCHYMATOUS NEPHRITIS: Epstein (Am. Jour. Med. Sc., Vol. 154, No. 5), from a new standpoint explains theoretically the cause of edema and suggests a revolutionary method of attack.

The author first shows that Widal's theory of salt retention in the tissues due to defective elimination of salt by the kidney is best substantiated by clinical experience.

He goes on to show in two tables which he published a few years ago giving the results of some of his own investigations, that in chronic parenchymatous nephritis the blood serum contains about half the percentage protein that it does normally and that about 90 per cent of this protein is globulin compared with 37 per cent in normal individuals. The albumen content of the blood serum is correspondingly reduced from about four and one-half per cent to one-half per cent in the parenchymatous type. This condition of affairs is explained by the author as being due to the very considerable loss of protein in the urine in these cases.

The author has previously shown that the subcutaneous fluids in this kind of nephritis contain a negligible amount of protein.

The author cites Starling's explanation of the mechanism which regulates the interchange of fluid between capillaries and tissue spaces. He believes there are two factors, (1) pressure and (2) osmosis which tend to produce an equilibrium. If the pressure is greater in the capillaries, fluid is forced into the tissues, and vice versa. Thus in case of hemorrhage, fluid is forced into the circulation because the pressure in the capillaries is diminished. Osmosis on the other hand is produced by the proteins which are colloids, and the osmotic pressure is greatest in the

circulation because of the greater amount of protein in the blood serum than in the lymph. That is, osmosis tends to force fluids from the tissues into the circulation.

Applying this theory to chronic parenchymatous nephritis he has shown that the continual loss of albumen through the kidneys causes an actual reduction in the percentage of protein in the serum. The work of Dieballe and von Ketly has proven this is not due to an hydremia. This lowered protein content of the blood lowers the osmotic pressure of the blood, and fluid passes from the blood stream into the tissues.

The treatment indicated to reduce the edema in these cases is therefore to increase the protein element of the blood. Blood transfusion should help but being impractical in many cases protein feeding remains to be considered.

The author advises this along with restriction of fluid intake to 1200 to 1500 c. c., only enough salt to make the food palatable, low carbohydrate diet and no fat.

Carbohydrates should be cut down as low as possible because water is the end product in their metabolism to a very considerable degree. The fats are excluded because a marked increase of fatty substances in the blood has been demonstrated in this type of nephritis. The author has instituted this line of treatment in a few extreme types of the disease and the results obtained have been very encouraging.

C. B. DRAKE.

SYPHILIS OF THE STOMACH: Paul Rokey (Northwest Medicine, April, 1917), states that in syphilitics with gastric complaints, where the cause is not in the stomach, it may be due to syphilis of organs in relation, as liver, pancreas, lymph nodes; to perigastric adhesions of syphilitic origin; to reflexes from syphilitic lesions at more distant points in abdomen; to the toxemia and cachexia of the disease elsewhere than in the stomach; and to specific lesions in the brain or to the gastric crises and gastric symptoms of tabes. Apparently syphilis of the stomach occurs in the tertiary stage or occasionally late secondary.

Syphilis affecting the stomach directly might do so by its toxins affecting the stomach wall and the gross and minute pathology of this change might be recognizable. Syphilis might affect the stomach by the presence of the spirochete pallida in its layers. The therapeutic test when used should be adequate. Response to it will probably be definite, but there are cases of syphilis usually resistant to anti-luetic treatment. There are now syphilitic dyspepsias that may be benefitted for a time by anti-specific treatment. Simple gastric ulcer is subject to spontaneous cure, also to periodicity, of course. Presumably syphilitic gastric ulcer is subject to similar phenomena. The prognosis of luetic gastric ulcer untreated would presumably be worse than that of simple ulcer, but if treated probably as good or better.

C. D. FREEMAN.

COLON BACILLUS PYELITIS IN BOY SUBJECTS: Graves (Am. Jour. Med. Sc., Vol. 154, No. 5), reports in full three typical cases of pyelitis in boys which show their marked tendency to chronicity.

Attention was first called to pyelitis in 1894 and since then reports have reported many cases, the majority in female children. The work of Eisendrath and Kahn quite convinces one that the lymphatic route of infection bears an important role in these cases. Probably the proximity of the female urethra and rectum rather than that of their apertures accounts for the predominance of cases in the female.

The occurrence of pyelitis in the male suggests a lymphogenous or blood-born infection possibly from some focus or condition in the intestines.

A pyelitis may not prevent a child's physical progress nor interfere with a fair degree of health. It may however lead to a fatal nephritis.

"Enlarged lymph glands, a recurring skin eruption, pronounced nervous manifestations almost meningeal in type, pains in the muscles, stiffness in the joints and cough may occupy the foreground in the condition."

Urinary antiseptics, alkalies and colon bacillus vaccine are the three common methods of attack. The investigations of Levy and Strauss have rather cooled the ardour of some hexamethylene advocates. They found that the urine must be abnormally acid for formaldehyde to be liberated and that the formaldehyde concentration must equal 1 to 5,000 to inhibit even the colon bacillus. They also found that 7 gr. t. i. d. is not sufficient to produce this concentration. Higher concentrations on the other hand may produce injury to the kidney tissue. In refutation stand the marked effects following urotropine medication.

Alkaline medication is urged for two reasons: first, because it has been found that phagocytosis* is most active in an alkaline medium, and second, because the colon bacillus prefers an acid medium. Drugs such as potassium citrate; beverages, such as lemonade or Vichy, and vegetables; fruit and milk are all of value.

Opinions differ as to the value of vaccines. Kidney lavage has proven of value in chronic cases in adults. General treatment and particularly hygiene of the large bowel with perhaps the assistance of the *Bacillus bulgarus* should be tried.

C. B. DRAKE.

END RESULTS OF NEPHRECTOMY FOR RENAL TUBERCULOSIS: Lower and Sharpe (Surg., Gyn. and Obs., Vol. 25, No. 5), believe that the outcome of this operation must be viewed from the standpoint of the immediate mortality rate, the late mortality rate and the persistence of symptoms.

The immediate mortality rate depends upon the condition of the patient at the time of operation and the technique of the operation. The combined statistics of Drs. Bunts, Crile and Lower show a mortality rate for nephrectomy in cases of renal tuberculosis of 2.3 per cent, while a recent series of 100

consecutive nephrectomies done by Lower for various lesions showed but 1 per cent.

The late mortality depends even more on the patient's condition and the technique of the operation.

In the author's experience the rapidity with which the bladder symptoms clear up, directly depends on the duration of the symptoms preceding the operation. A very considerable per cent of these cases never clear up entirely.

In an analysis of 87 consecutive nephrectomies for tuberculosis of the kidneys performed by Drs. Bunts, Crile and Lower, the author found that two died within four weeks, one of shock and the other from a second tuberculous kidney. Ten cases died later, two of tuberculous peritonitis, four of pulmonary tuberculosis, and four from cause unknown.

Regarding the persistence of symptoms, replies in 45 of the 87 cases showed that half of those previously complaining of bladder symptoms, mainly frequent urination, still had some trouble but that all of these cases had had these symptoms for a long time preceding the operation. Twenty per cent reported perfect health, and all the rest were greatly improved.

Twelve of the 45 replies reported pain of a colicky nature in the back, and 25 reported pain of varying degrees in the back, side or hip. Half of the series of 87 had had hematuria, and where the hemorrhage came from the kidney, it subsided, of course, after operation. The majority of cases with pyuria before operation had persistence of the condition.

The author found that patients usually waited for 8 months to 3 years before seeking surgical relief.

Males and females were equally affected and 33 was the average age. Of the 87 cases only 18 reported tuberculosis in other members of the family, while 43 gave a negative report.

In only two cases was the lesion proven bilateral, but the author calls attention to autopsy reports showing bilateral involvement in about two-thirds of all cases of tuberculous kidneys.

In regard to the healing of the wound, about a third healed inside the first month, the majority taking one to three years, and a few even longer. Eight per cent were classed as unimproved.

C. B. DRAKE.

A CASE OF ANEURISM OF THE INTERNAL CAROTID (INTRACRANIAL PORTION) AND ITS EFFECT UPON THE PATIENT'S VISION: John R.

Shannon (Arch. of Ophth., Vol. XLVI, No. 6, Nov., 1917), cites a case which came under his observation, a lady 52 years of age who consulted him because of the fact that two days previously she noticed on covering her left eye, a blurred vision of the right, particularly noticeable with respect to colored objects. V. O. D.= counting fingers at three feet; V. O. S.= 20/15, with correcting glass.

The pupillary reaction, transparency of the media, appearance of the eye-ground of the affected eye were normal, but on taking the visual field he found a small central scotoma of the dumb-bell variety, the

scotomata for colors being considerably larger, and in their customary order. The examination of the urine, and blood were normal, Wassermann test and spinal fluid negative, nor were there signs of toxemia. The sinuses were normal and although X-ray pictures of the skull were repeatedly taken nothing pathological was revealed. The teeth were inspected and two, which were slightly suspicious, removed. The patient was given pilocarpin injections, $\frac{1}{4}$ gr. every night for two weeks but without effect, and potassium iodide and sodium salicylate were given to the limit of tolerance.

The condition grew worse until six weeks after the onset there was a complete disappearance of the color fields. Fifteen weeks after the onset pallor of the nerve head was noted which was preceded by a reduction of vision to the perception of moving objects, by three weeks.

During the progress of this condition Shannon watched the condition of the left eye for signs of disease. In the course of ten weeks there was observed a possible wooliness of the disc margin although the vision and field were normal. A month later, the patient required a small increase of myopic correction in order to read the normal line, while four weeks after vision was 20/20 minus three letters. The field then showed an enlargement of the blind spot, with a sector-shaped defect in the temporal field for colors. A little later there appeared, in addition, a small central scotoma for small test-objects and the vision fell to 20/50. The author then called in consultation Dr. Duane and Dr. Harvey Cushing, neither of whom could offer any suggestion as to the etiology. Dr. Foster Kennedy was then consulted, reporting his conclusions as follows: that there were symptoms, not very marked, of a deterioration of function in the pyramidal tract going to the left side of the body. These, associated with the descending atrophy of the optic nerve on the right side, apparently progressing over to the left eye, and in spite of certain evidence opposed to the diagnosis, especially the presence in an almost normal degree of the sense of smell, led him to the conclusion that there was a slowly growing non-malignant tumor taking origin mainly at the base of the right frontal lobe. He suggested a decompression operation in the right frontal region.

The patient was operated by Dr. Charles Elsberg, who opened the cranial cavity and gently elevated the right frontal lobe, but no growth could be seen in this limited field explored. Almost thirteen weeks later, shortly after rising, she complained of a sharp pain in the head, became unconscious, lapsing into profound coma and dying ten hours afterwards.

The autopsy disclosed an aneurism of the right internal carotid artery near the circle of Willis which had burst, flooding the third, fourth and lateral ventricles. The growth was so situated as to press upon the right optic nerve which was atrophied, less markedly upon the chiasm and slightly upon the left optic nerve.

PAUL D. BERRISFORD.

HODGKIN'S DISEASE: A REPORT ON THE CASES OBSERVED AT THE COLLIS P. HUNTINGTON MEMORIAL HOSPITAL FROM APRIL, 1913, TO JULY, 1916, WITH SPECIAL REFERENCE TO TREATMENT WITH RADIUM AND THE X-RAY:

C. C. Simmons and G. Benet (The Boston Medical and Surgical Journal, Vol. CLXXVII, No. 24), believe there is a distinct disease of the lymphatic tissues called Hodgkin's disease, which can be separated from Banti's disease, lymphatic leukemia, etc. The writers have had no opportunity to substantiate Warfield's and Kristjanson's observations. They found the diphtheroid bacillus in two out of the three cases in which it was sought, and think it can probably be demonstrated in many of the cases. The inoculation experiments in guinea pigs and three monkeys were negative, and the piece of gland transplanted subcutaneously in the same patient from whom it was removed, atrophied and disappeared, which is an important observation, as a fragment of sarcoma or carcinoma treated in a like manner would probably have grown. This fact is rather against the tumor theory.

Microscopically, the glands were typical of what is known as the Dorothy Reed type of Hodgkin's disease, and were similar to the cases reported by Reed, Longcope, and Simmons. The cases of lymphosarcoma presented microscopically an entirely different appearance, and in the one case that came to autopsy no gland examined had the slightest resemblance to Hodgkin's disease.

Clinically, Hodgkin's is a fatal disease, that runs an acute or chronic course, little affected by treatment as regards the ultimate fatal result. It may usually be suspected, but there is no way to make a definite diagnosis without a microscopic examination of one of the glands. It cannot be differentiated clinically from certain cases of lymphosarcoma, tuberculosis, or even inflammatory glands. In this series the blood picture was not constant, and although the writers do not feel able to make a diagnosis on it alone it is often quite suggestive.

As regards treatment, radium and the X-rays have a distinct beneficial effect, radium being of more value than the X-ray. With treatment, the glands diminish in size, and the general condition improves. The relation between the treatment and the improvement is definite, and is seen in from one to three weeks after the first application of radium. The writers have no cases that can be called cured, but the patients are comfortable and able to attend to their duties until nearly the end of the disease. The writers do not know if the fatal termination has been much postponed, as the cases most benefited may have the chronic form of the disease. The treatments should not be limited to the palpable glands, as is usually the case, but should be directed against the lymphatic areas of the body, the mediastinum, abdomen, etc., from the first.

ERNEST T. F. RICHARDS.

BOOK REVIEWS

GENERAL SURGERY. The Practical Medicine Series. 1917, Vol. II. (Edited by ALBERT J. OCHSNER, M. D., F. R. M. S., LL. D., F. A. C. S. Surgeon-in-Chief Augustana and St. Mary's of Nazareth Hospitals; Professor of Surgery in the Medical Department in the State University of Illinois. Published by the Year Book Publishers, Chicago. Price \$2.00.)

This volume is a review of the surgical literature of the past year. It is very complete, and while of necessity its references are brief, it is of value as a reference book.

There has been a notable increase in surgery pertaining to war and a decrease in foreign surgical reference—probably due to a lack of foreign journals.

L. E. DAUGHERTY.

MILITARY SURGERY. (By DUNLAP PEARCE PENHALLOW, S. B., M. D. (Harv.), Chief Surgeon American Women's War Hospital, Paignton, England; Captain Medical Corps, Massachusetts National Guard; First Lieutenant Medical Reserve Corps, U. S. Army (Inactive List); Director of Unit, American Red Cross European Relief Expedition. With Introduction by SIR ALFRED KEOGH, K. C. B., Director-General Army Medical Service. Published by The Oxford University Press, American Branch, New York. Price \$5.00.)

This book deals with modern warfare and the many complex problems which involve the treatment of wounds by various projectiles. The author is Chief Surgeon of the American Women's War Hospital, Paignton, England, and has had ample opportunity to study wounds and their method of treatment. Many individual cases are cited and the illustrations are new and excellent. Shell Shock, Gas Poisoning, and Trench Foot, are amongst the conditions dealt with.

One of the most interesting and pathetic chapters deals with gas poisoning before the troops were protected by gas masks.

L. E. DAUGHERTY.

PEDIATRICS. The Practical Medicine Series. 1917, Vol. V. (Edited by ISAAC A. ABT, M. D., Professor of Pediatrics, Northwestern University Medical School, Attending Physician Michael Reese Hospital, and A. LEVINSON, M. D., Associate Pediatrician, Michael Reese Hospital. Published by The Year Book Publishers, Chicago. Price \$1.35.)

This short symposium on pediatrics covers 148 pages with short references to the advances and dis-

coveries made in the year 1917. The bacteriology of the various contagious diseases is reviewed with a short reference to vaccine and serum treatment as it has been elaborated in the past year.

Acidosis in children and its treatment by bicarbonate of soda occupies quite a large space. The vaccine treatment of pertussis with results is interesting reading. The latest researches into the bacteriology of measles and scarlet fever are noted and arouse the hope that in the not distant future some specific treatment may be developed.

Poliomyelitis is given an important place in the book. Peritonitis (pneumococcal) in children also receives a large amount of attention.

While it would be obviously impossible to go into great detail in a limited book on pediatrics, some of the subjects as tuberculosis, syphilis, diseases of the blood, etc., receive but brief mention. It is a handy little volume to carry around and refer to at odd moments.

EUGENE F. WARNER.

THE CAUSE OF TUBERCULOSIS, Together With Some Account of the Prevalence and Distribution of the Disease. Cambridge Public Health Series. (By LOUIS COBBETT, M. D., F. R. C. S., University Lecturer in Pathology, Cambridge. Published by the Cambridge University Press, 1917. Price \$6.50.)

The title of this book is unfortunately chosen (according to the opinion of the abstractor) as being uncomprehensive and misleading. Outside of the treatment and clinical phases of tuberculosis, this book contains practically everything pertaining to all the various ramifications occupied by the subject of tuberculosis in its relation to mankind and animal life. It covers in fine detail the mortality records of the disease in various countries and proves conclusively the actual decline of tuberculosis. It also deals thoroughly with the different types of tubercle bacilli and their effects on man and animals, together with the different modes of infection and contagion.

A wealth of statistical charts and pathological specimen photographs are shown to illustrate the diseased conditions in various organs of animals produced by the experimental injections of the three types of tubercle bacilli.

This book should find a place in the library of every public health officer, sanitation engineer, social welfare worker, phthisiographer, and all physicians or laymen who have at heart the stamping out of tuberculosis.

EUGENE F. WARNER.